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Life Cycle Management Automation Programmer's Manual

by
Don Kermath
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Life Cycle Management Automation is a microcomputer system to manage the Army Reserve Inventory of Facilities through their entire life cycle, from acquisition to disposal. The system is made up of several computer programs, all of which access a common database.

The programs included in the LCM are: UNIT, FACILITY, AMSA, BACKLOG, ProjDoc, MINOR, and REAL ESTATE. The programs UNIT, FACILITY, and AMSA collect the basic data used by BACKLOG, ProjDoc, MINOR, and REAL ESTATE. BACKLOG generates the 5-year plan. ProjDoc produces Military Construction, Army Reserve (MCAR) project documentation in minutes. MINOR manages the Minor Construction Program. REAL ESTATE manages the Real Estate Program.

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FOREWORD

This work was performed for the Office of the Chief, Army Reserve (OCAR), Headquarters, Department of the Army, under contract numbers DACA88-86-Q-0674 and DACA88-86-D-0006 by the Facility System (FS) Division of the U.S. Army Construction Engineering Research Laboratory (USACERL). The technical monitor was LTC William Harris, ARSC-R.

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COL Everett R. Thomas is Commander and Director of USACERL, and Dr. L.R. Shaffer is Technical Director.

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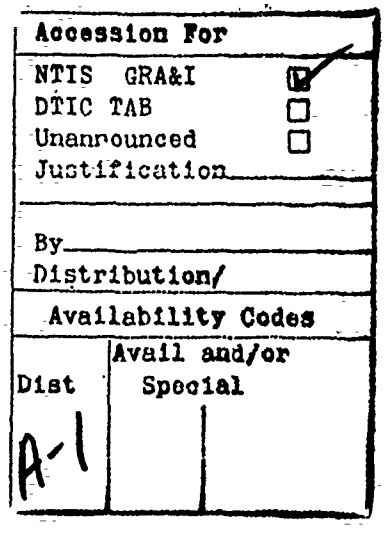


CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

The purpose of LCM Software is to provide a computer program that will help manage MCAR project life cycle. The basis for the program is a set of data files containing extensive information on USAR facilities and USAR units. These data files are created from information already available to the user. Corrections, changes, and additions are then made by the user to support production of reports.

No special computer training is required to use LCM software. The programs are designed to provide maximum user friendliness.

The benefits and advantages of LCM software are many. Currently the production of reports is a difficult, protracted, stubby pencil drill. Any revisions to a project require total recalculation of project information and total reproduction of the reports by hand. LCM software replaces the stubby pencil, producing needed reports in minutes.

Revisions to projects are simple. LCM software will almost instantaneously recalculate the data and reproduce updated reports.

The ability of LCM software to handle changes results in an extremely valuable by-product of the program. It allows the manager to judge the impact of varied scheduling, stationing, and/or construction options.

1.2 OBJECTIVE

1.2.1 Purpose of Program Maintenance Manual. The objective for writing this Program Maintenance manual for LCM software is to provide the maintenance programmer personnel with the information necessary to effectively maintain the system. The system refers to LCM automation software as of 01 OCT 89.

1.2.2 Project References. The program was developed under contract from the USACERL (United States Army Construction Engineering Research Lab), Champaign, Illinois, for OCAR (Office of the Chief, Army Reserve), HQDA [DAAR] (Headquarters, Department of the Army).

1.2.3 Standards or Reference Documentation.

a. Project Documentation User's Guide, Office of the Chief, Army Reserve, Construction Management Division, undated.

b. ProjDoc User's Manual, U.S. Army Construction Engineering Research Laboratory, FS Division, MPA Team, dated July 1988.

c. Military Construction Program (Justification Data Submitted to Congress), FY 1989, "Green Book," Department of the Army, United States Army Reserve, dated February 1988.

d. AR 140-478, Army Reserve Facilities, Projects and Programs, Headquarters, Department of the Army, dated 13 June 1986.

e. AR 140-485, Army Reserve Space Guidelines, U.S. Army Reserve Facilities, Headquarters, Department of the Army, dated 26 March 1986.

f. DOD-STD-7935, Department of Defense (DoD) Standard, Automated Data Systems (ADS) Documentation, DoD, dated 15 February 1983.

g. WordPerfect, Word Perfect Corp. version 5.1, 1990

h. The Documenter, WallSoft System, Inc. version 1.27b, 1987

i. UI Programmer, WallSoft System, Inc. version 2.0, 1989

j. dBXL, WordTech System, Inc. version 1.3, 1989

k. QuickSilver, WordTech System, Inc. version 1.3, 1989

l. RTLink, Pocket Soft, Inc. version 2.03, 1988

m. PLink86, Phoenix Technologies Ltd. version 2.2, 1987

n. R&R Relational Report Writer, Concentric DataSystems, Inc. version 3B, 1988

o. HP Softfonts, Hewlett-Packard Comp. (AC)

p. Automenu,

q. Qspro, Rick Hansen, November 1988

r. Pkarc, Pkware, Inc. version 3.5

1.2.4 Terms and Abbreviations. See Appendix A for a list of terms, definitions, acronyms, and abbreviations unique to this document and/or subject to interpretation by the user.

1.2.5 Security. The program is UNCLASSIFIED as is the Information contained in the completed data files. No extraordinary security measures are required. However normal precautions should be taken to safeguard the stored information and prevent unauthorized access to or destruction of the program and data.

1.3 APPROACH

MCAR automation is an integrated microcomputer system in which all subsystems are accessing the same database. To ensure maximum understanding of the whole system, we first illustrate the whole functional system overview to explain how the system is functioned, what each subsystem is doing, and how these subsystems are interrelated. Next, the database structure and design process are presented. Finally, each subsystem programs are explained by using program flow diagrams. The generation and compilation of program codes are also explained.

1.4 MODE OF TECHNOLOGY TRANSFER

The program and documentation for the LCM Automation will be available from Construction Management Division, Office of the Chief, Army Reserve.

CHAPTER 2: FUNCTIONAL SYSTEM DESCRIPTION

2.1 OVERVIEW

Life Cycle Management Automation is a microcomputer system intended to support DAAR-CM officers in managing the Army Reserve Inventory of Facilities through their entire life cycle, from acquisition to disposal. The system is made up of several computer programs, all of which access a common database. Each program supports a different managerial requirement in the facility life cycle. The relationship among the different programs and the database is shown in Figure 2.1.

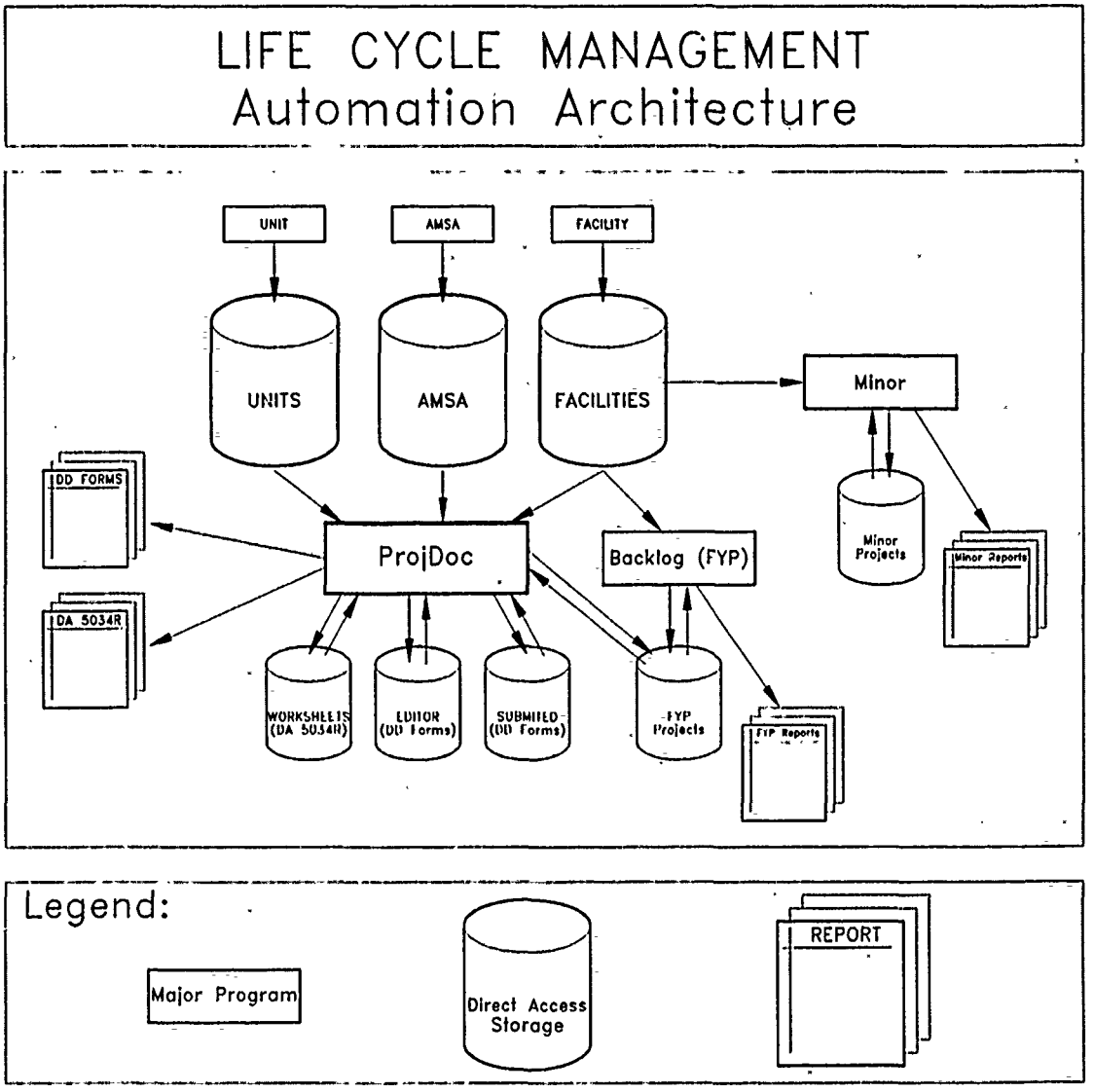


Figure 2.1

The programs included in the LCM system are: UNIT, FACILITY, AMSA, Backlog, ProjDoc, MINOR, and REAL ESTATE. The programs UNIT, FACILITY, and AMSA collect the basic data to be used by Backlog, ProjDoc, MINOR, and Real Estate. The integrated design of the LCM system makes data collection a one time effort from which the rest of the programs start. In addition, LCM Software also includes a few utilities to help operate and maintain the database.

The objective of UNIT is to gather and maintain a data inventory of U.S. Army Reserve Units to be used by the other LCM programs. The collection of unit data is done only once, and after that the program is only used to maintain the data. An explanation of how to use UNIT is found in Chapter 3 of this manual.

The objective of FACILITY is to gather and maintain a data inventory of U.S. Army Reserve facilities to be used by the other LCM programs. The collection of facilities data is done only once, and after that the program is only used to maintain the data. A description of FACILITY can be found in Chapter 3 of this manual.

The objective of AMSA is to gather and maintain a data inventory of Area Maintenance Support Activities (AMSA) to be used by the other LCM programs. The collection of AMSA data is done only once, and after that the program is only used to maintain the data. A description of AMSA is found in Chapter 3 of this manual.

The purpose of Backlog is to generate the 5-year plan as described in Army Regulation AR 140-478. A description of Backlog can be found in Chapter 4 of this manual.

The purpose of ProjDoc is to produce Military Construction Army Reserve (MCAR) project documents which are incorporated into the Military Construction Program, United States Army, Green Book. Army Regulations AR 140-478 and AR 140-485 describe the different forms and procedures required to document a project. A description of ProjDoc is found in Chapter 5 of this manual.

The purpose of MINOR is to manage the Minor Construction Program as described in the Army Regulations 140-478. A description of the program is found in Chapter 6 of this manual.

Chapter 7 provides a description of the different utilities used by LCM Automation system.

2.2 HARDWARE CONFIGURATION

LCM runs on IBM compatible computers with at least 420K of available system memory, PC DOS 3.X, 1 floppy disk drive, 8-15 megabytes of free hard disk for the programs, system files and databases, and a printer with 12-character per inch capability.

High quality printing is available on an HP LaserJet+ with a Prestige Elite 12cpi font cartridge and HP Softfonts (AC). With the laser printer it is possible to print 1390 and 1391 forms with border and form information with the data.

2.3 SOFTWARE LIST

Figure 2.2 13 shows the list of software used in developing the LCM system. Software titles are trademarks of the manufactures listed below.

LCM Software Requirement List

Manufacturer	Software	Version	Function
WordPerfect	WordPerfect	5.1	Word processing for writing documentation and editing memo fields.
Wall Soft	Documenter	1.27b	Document Quicksilver programs and data.
Wall Soft	UI Programmer	2.0	Create and edit template files and data dictionary.
WordTech	dBXL	1.3	Quicksilver program interpreter.
WordTech	QuickSilver	1.3	Compilation manager which prepares a list of programs which need to be compiled. Generates object code.
Pocket Soft	RTLink	2.03	Dynamic linker and overlay manager of object code. Uses run time library to reduce overall program size on disk.
Phoenix	PLink86	2.20	Dynamic linker and overlay manager of object code.
Hewlett-Packard	HP Softfonts	(AC)	Fonts used in 1390 and 1391 forms.
	Automenu		LCM main menu system.
Concentric Data Systems	R&R Report Writer	3B	dBXL database report generator.
Rick Hansen	QSPRO	11-88	QuickSilver compilation manager
Pkware, Inc.	Pkarc	3.5	File archive utility

Figure 2.2

2.4 DATABASE DESIGN

LCM database is a relational database. Figure 2.3. shows the entity relationship diagram.

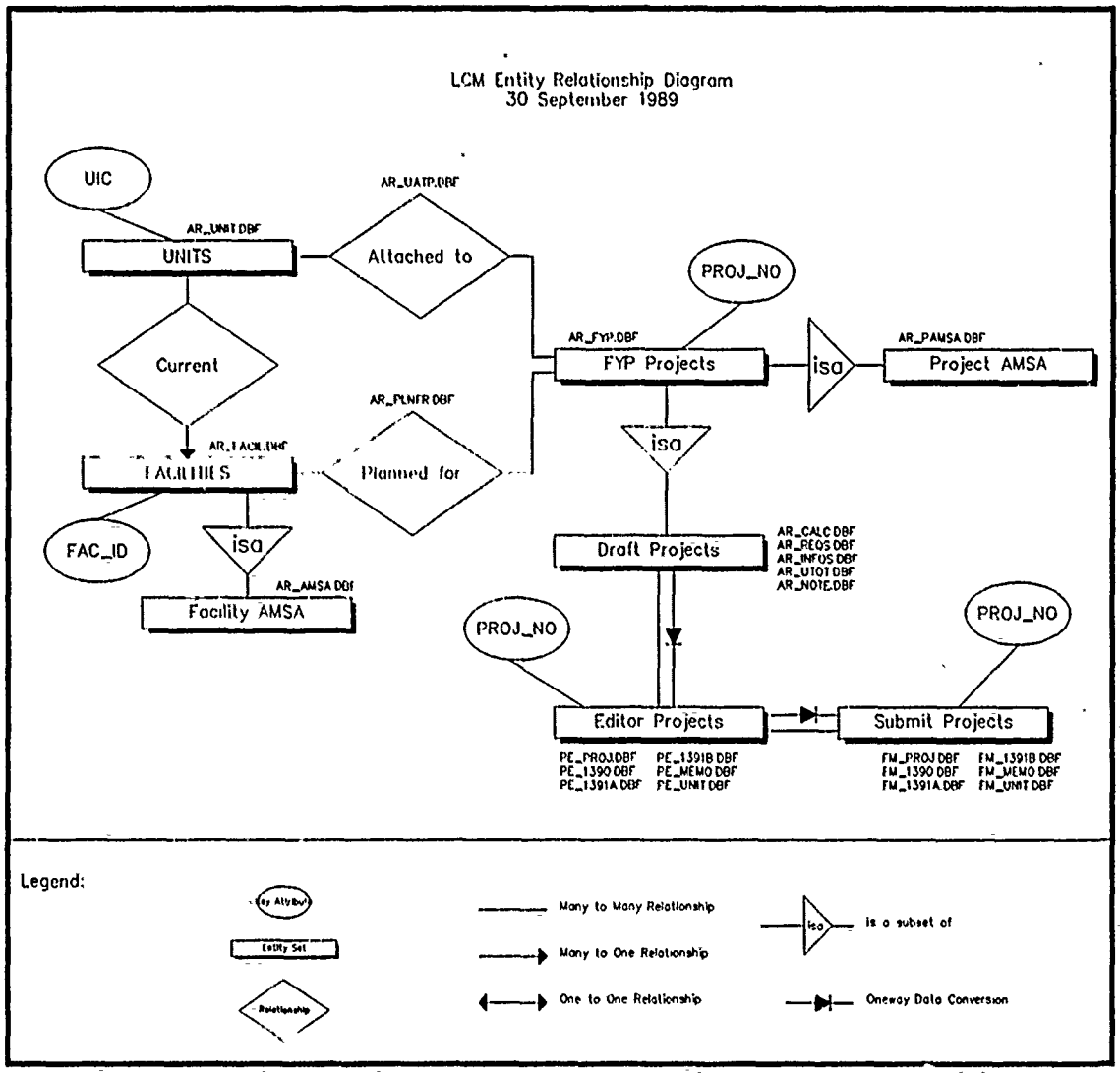


Figure 2.3

U.S. Army Unit inventory data is entered from UNIT subsystem. Data is stored in ar_unit.dbf which includes UIC (unit ID code, key field), CUR_FAC (which facility is the unit currently located), and other unit information.

Similarly, facility inventory data is entered from FACILITY subsystem. Data is stored in ar_facil.dbf which includes FAC_ID (facility ID, key field) and other facility information.

Some facilities include an AMSA. For these facilities, facility data is first entered from FACILITY, then AMSA data is entered from AMSA subsystem. AMSA data is stored in ar_amsa.dbf which includes FAC_ID (facility ID, key field) and other AMSA information.

UNIT, FACILITY, and AMSA are the inventory collection phase of the whole LCM automation system. They form the bases of project creation and documentation preparation.

Projects can be created from BACKLOG or ProjDoc. Basic project data is stored in ar_fyp.dbf, and the key field is PROJ_NO (project number). Since each project is using one facility and some units, two other files are also needed to keep track of these relationships. One is ar_plnfr.dbf in which the relation between project and facility is stored. The other is ar_uatp.dbf in which the relation between project and units is stored. If a project is also an AMSA project, its AMSA requirement data is stored in ar_pamsa.dbf.

Project documentation is created from ProjDoc subsystem. Draft project documents are prepared to calculate authorized space and enter user required space. The data is kept in ar_calc.dbf, ar_reqs.dbf, ar_infos.dbf, ar_utot.dbf, and ar_note.dbf. When preparing for DD Form 1390 and 1391, this editor project data is stored in pe_proj.dbf, pe_1390.dbf, pe_1391A.dbf, pe_1391B.dbf, pe_memo.dbf, and pe_unit.dbf. Finally, submit project data is stored in fm_proj.dbf, fm_1390.dbf, fm_1391A.dbf, fm_1391B.dbf, fm_memo.dbf, and fm_unit.dbf.

Minor construction programs are created from MINOR subsystem and its data is stored in ar_minor.dbf.

Consult the data dictionary in Appendix B for detail database information.

2.5 DESIGN PROCESS

In designing LCM system, the first step is to create the database structure. For each file, key field is selected for identifying records, index is created for fast search, and relationship between files is created for linking files together. These database files can be created from DBXL or UI Programmer.

Next, all of these database files are put into data dictionary by using UI Programmer. The name of our data dictionary is MCAR.DIC. The data dictionary serves not only as a reference of database files but also as a base for designing data entry windows and writing templates for programs.

After data dictionary is built, we begin to design programs. In the LCM automation system, some programs have similar structure. The only difference is that they access different database files and the data entry windows are different. Therefore, different windows are designed for each program but a common template is written and used by all of them. Then, by selecting a window and this template, we can generate these programs. All of these processes are done through UI Programmer. A list of windows and templates used by each program can be found in Chapter 2.

However, for those programs that either do not need data entry windows or are very unique, we wrote their codes directly by any kind of editor, such as Applied Systems Technologies' QEdit, instead of writing UI Programmer template to generate them.

Next, programs are compiled using QuickSilver and linked using RTlink or Plink86.

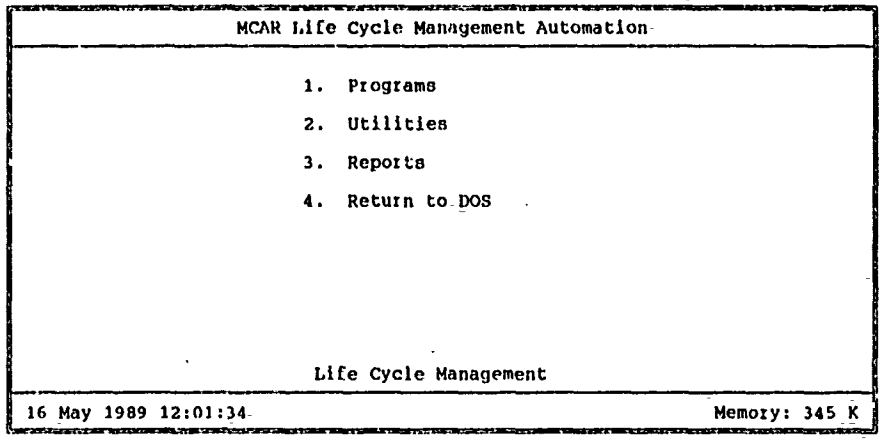
Finally, Automenu is used to generate various menus in LCM system so that all of the subsystems are integrated together.

In the procedure of documenting, WordPerfect is used for writing manuals. Documenter, dFlow, and dAnalyst are used for analyzing DBXL programs.

2.6 LCM AUTOMATION MENU SYSTEM

Automenu is used to tie all the executable files together. Each call to a program is a separate executable file. The individual programs, such as pd.exe, maintain their own menus with overlays. The following sub-paragraphs contain the automenu menus and the .mdf files that are used to create them.

2.6.1 MCAR Life Cycle Management Automation Main Menu. (Figure 2.4)

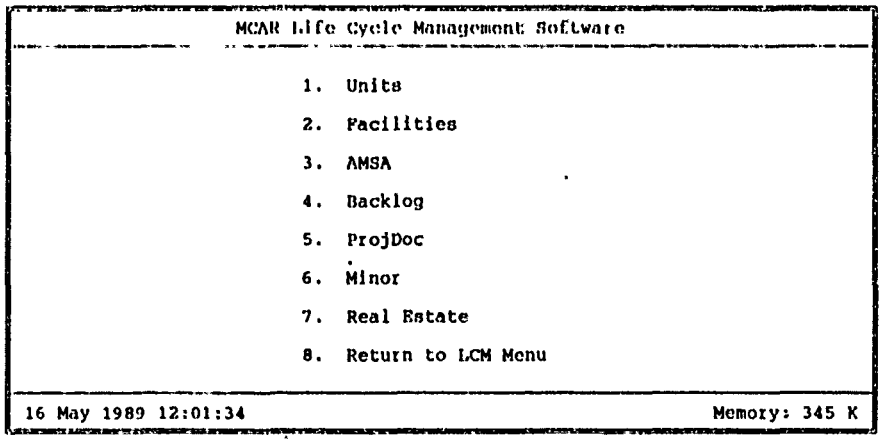



```
.Menu Definition File for the USAR Life Cycle Management Automation
................................................
$MCAR Life Cycle Management Automation
................................................
*1.  Programs
?Life Cycle Management
@Programs.MDF
................................................
*2.  Utilities
?Record and File Management
@Utility.MDF
................................................
*3.  Reports
?OCAR Use Only
@LCM.MDF
................................................
*4.  Return to DOS
?Go to DOS
................................................

#End of Menu Definition File
```

Figure 2.4

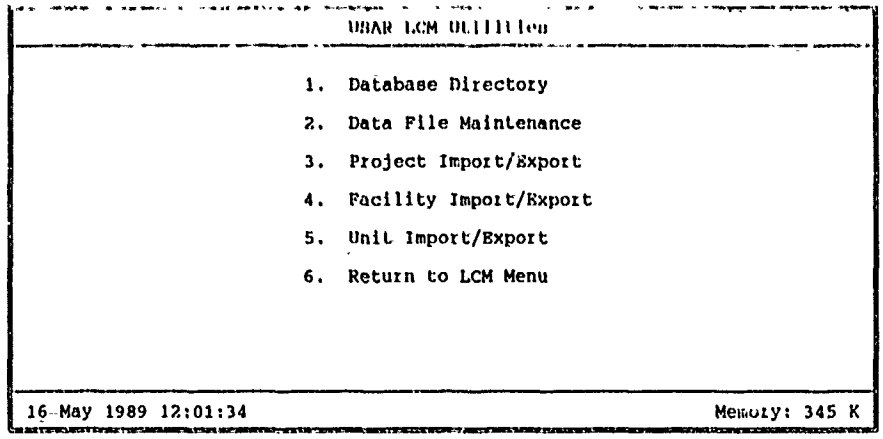
2.6.2 MCAR Life Cycle Management Software Programs Menu. (Figure 2.5)




```
.Menu Definition File to run USAR Project Planning Software
.............................................
%MCAR Life Cycle Management Software
.............................................
*1.  Units
?Unit Inventory
+unit
+auto programs.mdf
.............................................
*2.  Facilities
?Facility Inventory
+facility
+auto programs.mdf
.............................................
*3.  AMSA
?AMSA Inventory
+AMSA
+auto programs.mdf
.............................................
*4.  Backlog
?Five Year Plan and Outyears
+FYP
+auto programs.mdf
.............................................
*5.  ProjDoc
?Project Documentation
+pd
+auto programs.mdf
.............................................
*6.  MINOR
?MINOR Projects
+MINOR
+auto programs.mdf
.............................................
*7.  Real Estate
?Real Estate Projects
+auto programs.mdf
.............................................
*8.  Return to LCM Menu
?Return to First Menu
+cd\automenu
@LCM.MDF
.............................................
#End of Menu Definition File
```

Figure 2.5

2.6.3 LCM Utilities Menu. (Figure 2.6)




```
;Menu Definition File for LCM Utilities
.............................................
$USAR LCM Utilities
.............................................
*1.  Database Directory
?Change Database Directory
+pd_path.exe
+auto utility.MDF
.............................................
*2.  Data File Maintenance
?Sort, Index and Clean-up Data Files
+utility.exe
+auto utility.MDF
.............................................
*3.  Project Import/Export
+IE_PROJ
?Import or Export Project Information
+auto utility.MDF
.............................................
*4.  Facility Import/Export
+IE_FACIL.EXE
?Import or Export Facility Information
+auto utility.MDF
.............................................
*5.  Unit Import/Export
?Import or Export Unit Information
+IE_UNIT.EXE
+auto utility.MDF
.............................................
*6.  Return to LCM Menu
?Return to First Menu
@LCM.mdf
.............................................
#End of Menu Definition File
```

Figure 2.6

2.6.4 LCM Reports Menu. This option has not been implemented yet.

2.7 UI PROGRAMMER VERSION TWO (UI2)

2.7.1 What is UI2? UI Programmer Version Two (UI2) is a multi-lingual applications generator. UI2 is capable of maintaining database structures and documentation through its integrated data dictionary. The developer can paint screens and reports with database field pick-and-place capability from the data dictionary. An entire system from input screens to documentation can be maintained within UI2.

2.7.2 UI2 Memory Usage. When using UI2, the UI2 program is first loaded into memory. This uses about 350K memory space. Then the data dictionary is attached if it will be referenced by a .ww

form or a .prg program. The memory needed for loading a data dictionary is greater than the size of data dictionary because of some internal overhead. Therefore, adequate available memory space must be assured before using UI2.

2.7.3 UI2 Background. The LCM Automation software began with traditional coding methods (hardwired code). With the advent of UI2 code generating software it was decided to implement UI2 in the LCM Automation design process. However, thousands of lines of code had already been written in the traditional method. The decision was made to use UI2 for all new code and to redo all screen handling code with UI2. Time limitations have prevented the converting of all traditional code to UI2 format. It is recommended that all existing code that was generated without UI2 be converted to UI2 format to facilitate programming management. All new code generated for the LCM Automation system should incorporate the use of UI2.

Figure 2.7 illustrates the LCM Automation programming modification process. A modification is any change to the system whether it entails changing an existing feature or adding an entirely new element. Only modifications to existing hardwired code should be modified in the traditional method. All other features (e.g., database structure, screens, variables) should be added or modified using UI2.

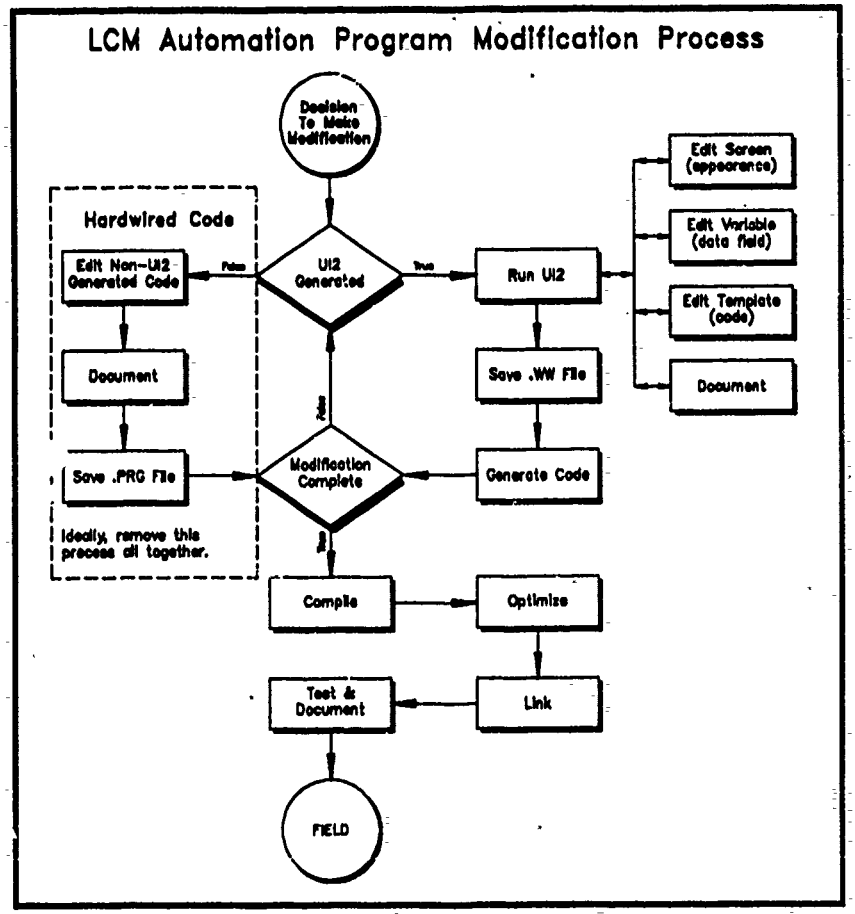


Figure 2.7

2.7.4 Slot Usage. There are three slots in data dictionary and .ww forms. They are extra variable attributes and can be used for any purpose. In the MCAR data dictionary, database slot 2 is used for the name of the key field of the database. For each field, slot 1 is used as the owner of the field (e.g., OCAR, FORSCOM, or C) while slot 2 is used only when it is the key field. In the .ww form, slot 1 is used for the help message while slot 2 displays example variable contents.

2.8 COMPILING, OPTIMIZING AND LINKING

The LCM system contains 8 programs, which are PD, AMSA, FACILITY, UNIT, IE_FACIL, IE_PROJ, IE_UNIT, and UTILITY. There are many ways to set up the directory structure. However,

if the dependencies of each program and the efficiency of hard disk space usage are considered, the following directory structure is recommended.

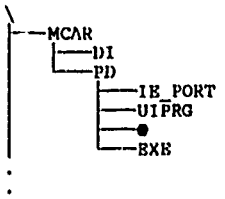


Figure 2.8

DI is the directory which consists of all .prg files and object code files of three programs, AMSA, FACILITY, and UNIT. IE_PORT is the directory which consists of all .prg files and object code files of three programs for import and export, IE_FACIL, IE_PROJ, IE_UNIT, and UTILITY. UIPRG is the directory which consists of all .prg files of the program PD. (NOTE that each program consists of several .prg files.) @ is the directory which consists of object code files for each prg file of PD. The last one, EXE, is the directory which consists of all executable files of LCM system. The directories of .ww, .dic, .tem, .tlb, .dbf and .ndx files will be described later.

The RAM disk plays an important role in compiling and linking. For example, if you have 6M RAM disk when you compile program PD, you will save almost one third to one half of the time because a lot of I/O is needed during compiling and linking. For a different size of RAM disk, different compiling and linking batch files are recommended.

QSPRO is one of several commands used in batch files. QSPRO analyzes the program and generates a list of .prg files which were updated after the last compilation. A lot of time is saved because the unnecessary compilations are avoided through program analysis. QSPRO creates a compiler list file called qspro.lst. The usage of QSPRO is shown in Figure 2.9.

```
Usage: qspro [-g] [-f] [-v] [-y] [-z] <top program name>

     OPTIONS:

     -g          :  Compile For Debugger
     -f          :  Drop First Character
     -v          :  Display NO Line Count
     -y          :  Turn Direct Video Off
     -z          :  Turn Snow Detection ON
```

Figure 2.9

Next, DB3C is a compiler which compiles a .prg file into object code(d-code) file. The usage of DB3C is shown in Figure 2.10.

```
Usage : db3c [-a] [-c] [-dx] [-f] [-g] [-o] [-p] [-v] [-w] [-\] filelist | ~file

                    OPTIONS :

                    -a              :  Automatic Compilation
                    -c              :  Check syntax only
                    -d<drive>       :  Write object-code file(s) on specified drive
                    -f              :  Drop first character of filename
                    -o              :  To support ON <command> and RETRY
                    -p              :  No keyboard input
                    -v              :  Line count not displayed
                    -w              :  No warning on trivial errors
                    -\              :  Do not compile *\ command lines
                    -g              :  Compile for debugger
```

Figure 2.10

DB3L is a d-code linker which links the d-code files produced by DB3C into a executable file and a .ovl file. It also creates a .dbc file which can be processed further to speed up the execution. DO NOT confuse the process of linking d-code, which is linked by DB3L, with the process of linking assembly code, which is linked by PLINK86 (described later). The executable file produced by PLINK86 is much faster than the executable file produced by DB3L. The usage of DB3L is shown in Figure 2.11.

```
Usage: db3l [-d<dir>] [-f] [-g] [-l<lib>] [-o<dir>] [-q] [-w] filelist | ~file ...

                    OPTIONS :

                    -d<path>          :  Write .DBC overlay file to specified drive\directory
                    -f                :  Root filenames's first character was dropped
                    -g                :  Link for debugger
                    -l<[path]library> :  Use specified linker library, DEFAULT : DB3PCL.LIB
                    -o<path>          :  Write .EXE,.OVL,and install files to specified
drive\directory
                    -q                :  Generate .DBC file only, DEFAULT : .EXE,.OVL,.DBC
                    -w                :  Suppress warning on trivial errors
```

Figure 2.11

QS is an assembly code translator which translates a .dbc (d-code) file into .obj (assembly code) files. The usage of QS is shown in Figure 2.12.

```
Usage:  qs [-@F] [-3] [-cO] [-g] [-lX] [-m#] [-n#] [-oF] [-p] [-s] [-vF] [-dP] <.DBC>

                    OPTIONS :

                    -@<file> :  <file> specifies obj modules and libraries
                    -3       :  Gonerates .LNK file for MS-Linker 3.xx, DEFAULT: 2.xx
                    -c<obj>  :  Specifies obj modules and libraries
                    -g       :  OPTIMIZEs, LINKs and GOes
                    -l<x>    :  Calls linkor <x>.exe to obtain EXE file, DEFAULT: LINK.EXE
                    -m<#,#,#>:  Specifies memory variable allocation
                                DEFAULT: character variables: 6K; Date, numeric, and logical
variables:
                                3K; Array definitions: 1K
                    -n<#,#>  :  Specifies the number of memory/edit variables
                                DEFAULT: memory variables: 256;  edit variables: 128
                    -o<file> :  Specifies output file name, DEFAULT: <DBCFILE>.OBJ
                    -p       :  Generates .LNK file for PLINK86, DEFAULT: for MS-Linker
                    -s       :  Generates .LNK file for QS MS-DOS, DEFAULT: PC-DOS
                    -v<file> :  Generates files for overlay structures specified in <file>
                    -d<path> :  Specifies the path for QS libraries, DEFAULT: current
directory
                    -x       :  Generates the error dump, DEFAULT: none
```

Figure 2.12

Finally, PLINK86 is an assembly-code linker which links .obj files into executable files. PLINK86 creates an overlay system, defined by the programmer with QS .spc file, which makes the program PD work in limited memory space.

In the following batch files, assume that the hard disk is in C: drive and the RAM disk is in D: drive. First, the case without utilizing a RAM disk is shown.

2.8.1 No RAM disk usage

2.8.1.1 Compile, optimize and link PD

```
cd \mcar\pd\uiprg
qspro -f pd
db3c -f -o -w  -qspro.lst
db3c -f -o -w udfs
copy @*.prg \mcar\pd\@
del @*.prg
cd \mcar\pd\@
db3l -f -w -q -d\mcar\pd\exe pd udfs
cd \mcar\pd\exe
qs -p -vpd.spc pd
plink86 @pd.lnk
del *.obj
```

2.8.1.2 Compile, optimize and link AMSA, FACILITY, and UNIT

```
rem ****** COMPILE AND LINK AMSA ******
cd \mcar\di
qspro -f amsa
db3c -f -o -w  -qspro.lst
db3l -f -w  -q -d\mcar\pd\exe amsa
cd \mcar\pd\exe
qs -p amsa
plink86 @amsa.lnk
del *.obj

rem ****** COMPILE AND LINK FACILITY ******
cd \mcar\di
qspro -f facility
db3c -f -o -w  -qspro.lst
db3l -f -w  -q -d\mcar\pd\exe facility
cd \mcar\pd\exe
qs -p  facility
plink86 @facility.lnk
del *.obj

rem ****** COMPILE AND LINK UNIT ******
cd \mcar\di
qspro -f unit
db3c -f -o -w  -qspro.lst
db3l -f -w  -q -d\mcar\pd\exe unit
cd \mcar\pd\exe
qs -p unit
plink86 @unit.lnk
del *.obj
```

2.8.1.3 Compile, optimize and link IE_FACIL, IE_PROJ, IE_UNIT, and UTILITY

```
rem ****** COMPILE AND LINK IE_FACIL ******
cd \mcar\pd\ie_port
qspro -f ie_facil
db3c -f -o -w -qspro.lst
db3l -f -w -q -d\mcar\pd\exe ie_facil
cd \mcar\pd\exe
qs -p ie_facil
plink86 @ie_facil.lnk
del *.obj

rem ****** COMPILE AND LINK IE_PROJ ******
cd \mcar\pd\ie_port
qspro -f ie_proj
db3c -f -o -w -qspro.lst
db3l -f -w -q -d\mcar\pd\exe ie_proj
cd \mcar\pd\exe
qs -p ie_proj
plink86 @ie_proj.lnk
del *.obj
```

```
rem ****** COMPILE AND LINK IE_UNIT ******
cd \mcar\pd\ie_port
qapro -f ie_unit
db3c -f -o -w -qapro.lnt
db3l -f -w -q -d\mcar\pd\exe ie_unit
cd \mcar\pd\exe
qa -p ie_unit
plink86 @ie_unit.lnk
del *.obj

rem ****** COMPILE AND LINK IE_UNIT ******
cd \mcar\pd\ie_port
qapro -f utility
db3c -f -o -w -qapro.lnt
db3l -f -w -q -d\mcar\pd\exe utility
cd \mcar\pd\exe
qa -p utility
plink86 @utility.lnk
del *.obj
```

2.8.2 1M RAM disk usage

2.8.2.1 Compile, optimize and link PD

```
copy c:\mcar\pd\uiprg\*.prg d:
copy c:\mcar\pd\uiprg\*.bat d:
c:
cd \mcar\pd\@
d:
qapro -f -dd pd
db3c -f -o -w -dc -qapro.lst
db3c -f -o -w -dc udfs
c:
cd \mcar\pd\@
db3l -f -w -q -dc:\mcar\pd\exe pd udfs
cd \mcar\pd\exe
qa -p -vpd.spc pd
plink86 @pd.lnk
del *.obj
```

2.8.2.2 Compile, optimize and link AMSA, FACILITY, and UNIT

```
rem ****** COMPILE AND LINK AMSA ******
copy \mcar\di\*.prg d:
copy \mcar\di\*.bat d:
d:
qapro -f amsa
db3c -f -o -w -qapro.lst
db3l -f -w -q amsa
qa -p amsa
plink86 @amsa.lnk
del *.obj
copy @*.prg \mcar\di\*.prg
copy amsa.exe \mcar\pd\exe
del @*.prg
del *.dbc
del amsa.exe

rem ****** COMPILE AND LINK FACILITY ******
copy \mcar\di\*.prg d:
copy \mcar\di\*.bat d:
d:
qapro -f facility
db3c -f -o -w -qapro.lst
db3l -f -w -q facility
qa -p facility
plink86 @facility.lnk
copy @*.prg \mcar\di\*.prg
copy facility.exe \mcar\pd\exe
del @*.prg
del *.dbc
del *.obj
del facility.exe
```

```
rem ****** COMPILE AND LINK UNIT ******
copy \mcar\di\*.prg d:
copy \mcar\di\*.bat d:
d:
qspro -f unit
db3c -f -o -w -qspro.lst
db3l -f -w -q unit
qs -p unit
plink86 @unit.lnk
copy @*.prg \mcar\di\*.prg
copy unit.exe \mcar\pd\exe
del @*.prg
del *.dbc
del *.obj
del unit.exe
```

2.8.2.3 Compile, optimize and link IE_FACIL, IE_PROJ, IE_UNIT, and UTILITY

```
rem ****** COMPILE AND LINK IE_FACIL ******
copy \mcar\pd\ie_port\*.prg d:
copy \mcar\pd\ie_port\*.bat d:
d:
qspro -f ie_facil
db3c -f -o -w -qspro.lst
db3l -f -w ie_facil
qs -p ie_facil
plink86 @ie_facil.lnk
copy @*.prg \mcar\di\*.prg
copy ie_facil.exe \mcar\pd\exe
del @*.prg
del *.dbc
del *.obj
del ie_facil.exe

rem ****** COMPILE AND LINK IE_PROJ ******
copy \mcar\pd\ie_port\*.prg d:
copy \mcar\pd\ie_port\*.bat d:
d:
qspro -f ie_proj
db3c -f -o -w -qspro.lst
db3l -f -w -q ie_proj
qs -p ie_proj
plink86 @ie_proj.lnk
copy @*.prg \mcar\di\*.prg
copy ie_proj.exe \mcar\pd\exe
del @*.prg
del *.dbc
del *.obj
del ie_proj.exe

rem ****** COMPILE AND LINK IE_UNIT ******
copy \mcar\pd\ie_port\*.prg d:
copy \mcar\pd\ie_port\*.bat d:
d:
qspro -f ie_unit
db3c -f -o -w -qspro.lst
db3l -f -w ie_unit
qs -p ie_unit
plink86 @ie_unit.lnk
copy @*.prg \mcar\di\*.prg
copy ie_unit.exe \mcar\pd\exe
del @*.prg
del *.dbc
del *.obj
del ie_unit.exe

rem ****** COMPILE AND LINK UTILITY ******
copy \mcar\pd\ie_port\*.prg d:
copy \mcar\pd\ie_port\*.bat d:
d:
qspro -f utility
db3c -f -o -w -qspro.lst
db3l -f -w utility
qs -p utility
plink86 @utility.lnk
copy @*.prg \mcar\di\*.prg
copy utility.exe \mcar\pd\exe
del @*.prg
del *.dbc
del *.obj
del utility.exe
```

2.8.3 6M RAM usage. Compile, optimize and link PD.

```
copy c:\mcar\pd\ulprg\*.prg d:
copy c:\mcar\pd\ulprg\*.bat d:
copy c:\mcar\pd\exe\pd.mpc  d:
qupro -f  pd
db3c -f -o -w  -qapro.lnt
db3c -f -o -w  udfs
db3l -f -w -q  pd udfs
qs -p -vpd.spc pd
plink86 @pd.lnk
copy @*.prg c:\mcar\pd\@
copy pd.exe c:\mcar\pd\exe
copy pd?.ovl c:\mcar\pd\exe
del @*.prg
del pd.exe
del pd?.ovl
del pd.dbc
del *.obj
```

The batch files for compiling and linking the other programs are the same as above.

2.9 PROGRAM GENERATION

As mentioned above, each program contains several .prg files. Actually, each .prg file is a procedure coded with dBXL language which is quite similar to dBASE III. .ww file is a screen file used by UI2 and .tem file is a template file used by UI2. Besides .ww and .tem files, UI2 needs .dic and .tlb files to generate a .prg file. .dic file is a dictionary file which contains all field names used in the database and the description of those field names. .tlb file is a template library file. The directory structure of .ww, .dic, .tem and .tlb files will be described later. Therefore, a .prg file may be related to a .ww file and a .tem file. The relationship between .prg files and .ww and .tem files is shown in Figure 2.13 below.

Record#	PRG_NAME	WW_NAME	TEM_NAME	NOTE
70	CHKPRN	-	-	
73	DC_APCPE	-	-	
76	DC_APEPS	-	-	
71	DC_DISPC	-	-	
74	DC_DISPE	-	-	
72	DC_INPE	-	-	
75	DC_INPS	-	-	
32	DC_PCPE	-	-	
33	DC_PEPS	-	-	
94	DC_SCRN1	-	-	
95	DC_SCRN2	-	-	
79	DELREC	-	-	
78	DI_FCSCH	DI_FCSCH	DI_FCSCH	
80	DI_UNSCH	DI_UNSCH	DI_UNSCH	
31	DOWNLOAD	-	-	
4	ENVIRON	-	-	
81	FDELREC	-	-	
96	FM_13901	-	-	
97	FM_13902		-	
98	FM_13911	-	-	
99	FM_13912	-	-	
100	MC_1391C		-	
3	ON_ERROR			
2	ON_ESC	-		
83	PCP_1390	-	-	
84	PCP_1391		-	
64	PCP_DRFT	-	-	
87	PCP_INPS	-	-	
86	PCP_NSPR	-	-	
88	PCP_PRVL	-	-	
89	PCP_QUES	-	-	
85	PCP_SPR	-	-	
1	PD	PD	ABAR	
6	PD_BAR	PD	ABAR	
22	PD_CALC	-	-	
36	PD_CNFG1	PD_CNFG1	PD_CNFG1	
37	PD_CNFG2	PD_CNFG2	PD_CNFG2	
15	PD_CNFGX	-	-	
12	PD_D	PD	ABAR	
7	PD_INDEX	-	-	

13	PD_O	PD	ABAR
28	PD_OD	PD	ABAR
65	PD_ODB	PD	ABAR
29	PD_OF	PD	ABAR
67	PD_OFF	PD	ABAR
30	PD_OP	PD	ABAR
68	PD_OPD	PD	ABAR
10	PD_P	PD	ABAR
41	PD_PAMS1	PD_PAMS1	PD_PAMS1
17	PD_PAMSX	-	-
35	PD_PATH	-	-
34	PD_PRJNO	-	-
38	PD_PROJ1	PD_PROJ1	PD_PROJ
39	PD_PROJ2	PD_PROJ2	PD_PROJ
40	PD_PROJ3	PD_PROJ3	PD_PROJ
16	PD_PROJX	-	-
77	PD_PRSCH	PD_PRSCH	PD_PRSCH
14	PD_U	PD	ABAR
11	PD_W	PD	ABAR
21	PD_WR	PD	ABAR
56	PE_13901	PE_13901	ASCR
57	PE_13902	PE_13902	ASCR
58	PE_13903	-	-
24	PE_1390X	-	-
59	PE_13911	PE_13911	PE_13911
60	PE_13912	PE_13912	PE_13912
61	PE_13913	PE_13913	ASCR
62	PE_13914	PE_13914	ASCR
25	PE_1391X	-	-
27	PE_CALC	-	-
8	PE_INDEX	-	-
63	PE_MEMO1	PE_MEMO1	ASCR
26	PE_MEMOX	-	-
55	PE_PROJ1	PE_PROJ1	ASCR
23	PE_PROJX	-	-
69	PRNPORT	-	-
82	PROJ_SCH	PROJ_SCH	SEARCH
9	PS_INDEX	-	-
5	SIGNON	PD	ABAR
90	SP_13901	-	-
91	SP_13902	-	-
92	SP_1391	-	-
66	SP_GRNBK	-	-
93	SP_RWDAT	-	-
101	UDFS	-	-
42	WS_50341	WS_50341	WS_5034
43	WS_50342	WS_50342	WS_5034
44	WS_50343	WS_50343	WS_5034
45	WS_50344	WS_50344	WS_5034
46	WS_50345	WS_50345	WS_5034
47	WS_50346	WS_50346	WS_5034
48	WS_50347	WS_50347	WS_5034
49	WS_5034C	-	-
18	WS_5034X	-	-
20	WS_FURNX	-	-
53	WS_I5034	-	-
54	WS_IINFO	-	-
50	WS_INFO1	WS_INFO1	PD_PROJ
51	WS_INFO2	WS_INFO2	PD_PROJ
52	WS_INFOC	-	-
19	WS_INFOX	-	-

Figure 2.13

In Figure 2.13, "-" means that the prg file does not relate to a .WW or a .TEM file. The list above is shown alphabetically by the prg name.

For the programs AMSA, FACILITY, and UNIT, as shown in Figure 2.14

Record#	PRG_NAME	WW_NAME	TEM_NAME	NOTES
13	AMBA			
14	DI_AMBA1	DI_AMBA1	DI_FAC	
15	DI_AMBAX			
16	DI_FAC1	DI_FAC1	DI_FAC	
17	DI_FAC2	DI_FAC2	DI_FAC	
18	DI_FAC3	DI_FAC3	DI_FAC	
19	DI_FAC4	DI_FAC4	DI_FAC	
20	DI_FAC5	DI_FAC5	DI_FAC	
21	DI_FACX	-	-	
22	DI_FCSCH	DI_FCSCH	DI_FCSCH	
1	DI_UNIT1	DI_UNIT1	DI_UNIT	
2	DI_UNIT2	DI_UNIT2	DI_UNIT	
3	DI_UNIT3	DI_UNIT3	DI_UNIT	
4	DI_UNIT4	DI_UNIT4	DI_UNIT	
5	DI_UNITX	-	-	
6	DI_UNSCH	DI_UNSCH	DI_UNSCH	
7	ENVIRON	-	-	COPIED FROM PD SOURCE CODE.
8	FACILITY	-	-	
9	PD_INDEX	-	-	COPIED FROM PD SOURCE CODE
10	PE_INDEX	-	-	COPIED FROM PD SOURCE CODE
11	PS_INDEX	-	-	COPIED FROM PD SOURCE CODE
12	UNIT	-	-	

Figure 2.14

For the programs IE_FACIL, IE_PROJ, IE_UNIT and UTILITY, as shown in Figure 2.15.

Record#	PRG_NAME	WW_NAME	TEM_NAME	NOTE
8	ENVIRON	-	-	
12	IE_DIR	IE_DIR	IE_DIR	
20	IE_DUPL	IE_DUPL	IE_DUPL	
21	IE_DUPLF	IE_DUPLF	IE_DUPLF	
22	IE_DUPLU	IE_DUPLU	IE_DUPLU	
14	IE_FACIL	-	-	
17	IE_FCSCH	IE_FCSCH	IE_FCSCH	
24	IE_FTRAN	-	-	
19	IE_POP	IE_POP	IE_POP	
13	IE_PROJ	-	-	
16	IE_PRSCH	IE_PRSCH	IE_PRSCH	
23	IE_PTRAN	-	-	
15	IE_UNIT	-	-	
18	IE_UNSCH	IE_UNSCH	IE_UNSCH	
25	IE_UTRAN	-	-	
7	ON_ERROR	-	-	
6	ON_ESC	-	-	
9	PD_INDEX	-	-	
10	PE_INDEX	-	-	
11	PS_INDEX	-	-	
1	UTILITY	UTILITY	UTILITY	
2	UTI_BAR	UTILITY	UTILITY	
3	UT_CLNUP	UTILITY	UTILITY	
4	UT_INDEX	UTILITY	UTILITY	
5	UT_SORT	UTILITY	UTILITY	

Figure 2.15

Basically, you can put .ww files and .tem files in any directory you like, but the following directory structure is recommended.

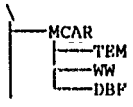


Figure 2.16

The directory TEM contains all .tem and .tlb files. The directory WW contains all .ww and .dic files. The directory DBF contains all .dbf, .ndx and .dbt files associated with the finished program.

2.10 ON-SITE INSTALLATION

2.10.1 Install Batch Files.The LCM system contains 10 floppy disks of 360K; it can be installed by using the command "install <drive:>". For example, you want to install LCM system in C: drive. Key in "install C:". The LCM system will be installed in C:\MCAR and the empty database will be installed in C:\MCAR\DBF. The installation step will be described below. The first step is to put DISK 1 in Drive A: and key in "install C:", the screen will look like Figure 2.17.

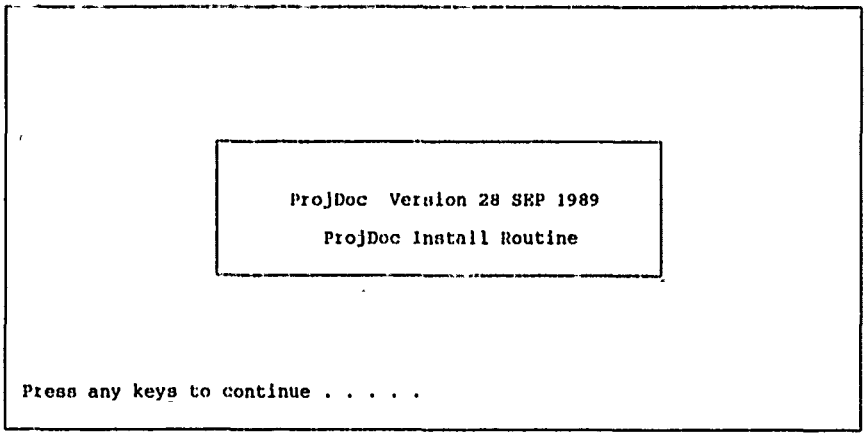


Figure 2.17

After you press a key, the files in this floppy disk will be copied to your hard disk. Then follow the message which appears on screen. For example, after DISK 1 is copied to your hard disk, the screen will look like Figure 2.18.

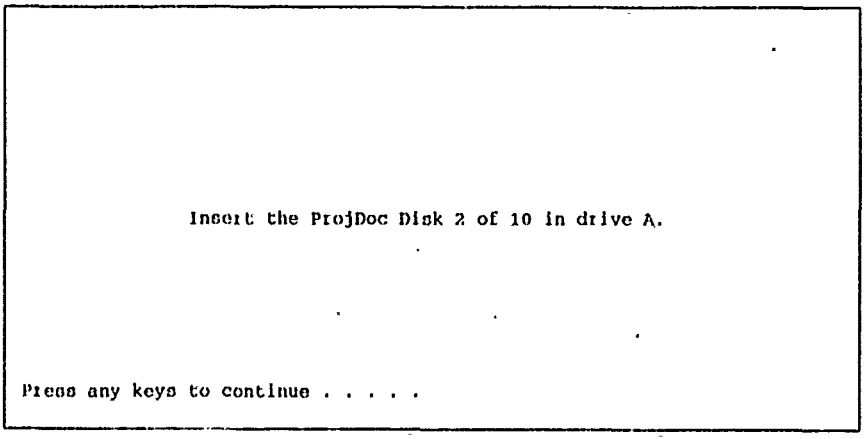


Figure 2.18

Similarly, follow the messages which appear on screen to install the other floppy disks. After the 10 floppy disks are copied into your hard disk, the screen will look like Figure 2.19.

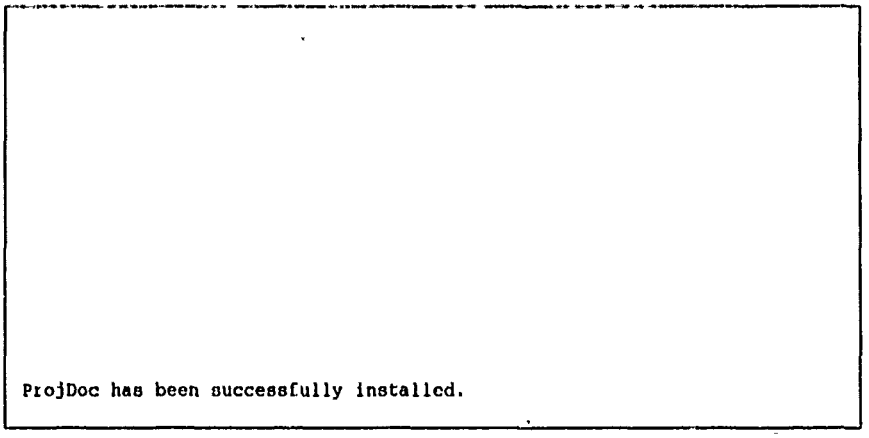


Figure 2.19

This means that the LCM system has been successfully installed.

The installation is done by two batch files. One is install.bat and the other is updater.bat. The content of install.bat is shown in Figure 2.20.

```
echo off
a:
cls
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
pause
cls
if "%1==" goto Helpinst
for %%f in (C:,c:,D:,d:,E:,e:,F:,f:,G:,g:,H:,h:,Y:,y:) do if %1.==%%f. goto START
for %%f in (I:,i:,J:,j:,K:,k:,L:,l:,M:,m:,N:,n:,O:,o:,P:,p:,Z:,z:) do if %1.==%%f. goto
START
for %%f in (Q:,q:,R:,r:,S:,s:,T:,t:,U:,u:,V:,v:,W:,w:,X:,x:) do if %1.==%%f. goto START
goto BADDRIVE

:START
md %1\mcar
md %1\mcar\dbf
cls
if exist %1\mcar\pd.exe goto WARNING
if exist %1\mcar\auto.bat goto WARNING
if exist %1\mcar\facility.exe goto WARNING
if exist %1\mcar\unit.exe goto WARNING
if exist %1\mcar\amsa.exe goto WARNING
if exist %1\mcar\ie_facil.exe goto WARNING
if exist %1\mcar\ie_unit.exe goto WARNING
if exist %1\mcar\ie_proj.exe goto WARNING
:CHECK_DBF
if exist %1\mcar\dbf\ar_fyp.dbf goto WARN_DBF
if exist %1\mcar\dbf\ar_unit.dbf goto WARN_DBF
if exist %1\mcar\dbf\ar_facil.dbf goto WARN_DBF
```

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ProjDoc Install Routine

```
goto START_INSTALL
:WARNING
cls
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo          This installation will destroy the old executable files.
echo          Are you sure you want to do it? If yes, press any key to continue,
echo          otherwise, press CTRL-C to stop.
echo
echo
echo
echo
echo
echo
echo
pause
goto CHECK_DBF
:WARN_DBF
cls
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo          This installation will destroy the old database files.
echo          Are you sure you want to do it? If yes, press any key to continue,
echo          otherwise, press CTRL-C to stop.
echo
echo
echo
echo
echo
echo
echo
echo
pause
cls
:START_INSTALL
%1
cd\mcar
copy a:Updater.bat Updater.bat
Updater %1
goto END
:Helpinst
echo 'GPlease Try Again.  The Correct Install Command Is:
echo
echo     "INSTALL <drive:>"              To install ProjDoc.
echo
echo Install is aborted.
goto End
:BADDRIVE
echo
echo Invalid drive letter specified.  Install is aborted.
goto Helpinst
echo
:End
```

Figure 2.20

The content of updater.bat is shown in Figure 2.21.

```
echo off
cls
echo
echo
echo
echo
```

```
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo ProjDoc will be installed on drive %1
echo
echo Copying files to drive %1\MCAR . . .
echo
a:DISK1 /r

cls
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo                Insert the ProjDoc Disk 2 of 10 in drive A.
echo
echo
echo
echo
echo
echo
echo
pause

:TryAgain_2
echo
if not exist a:disk2.exe echo This is not ProjDoc Disk 2 of 10
if not exist a:disk2.exe echo Please Insert the ProjDoc Disk 2 of 10 in drive A
if not exist a:disk2.exe pause
if not exist a:disk2.exe goto TryAgain_2

echo Copying files to drive %1\MCAR . . .
a:DISK2 /r

cls
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo                Insert the ProjDoc Disk 3 of 10 in drive A.
echo
echo
echo
echo
echo
echo
echo
pause

:TryAgain_3
if not exist a:disk3.exe echo This is not ProjDoc Disk 3 of 10
if not exist a:disk3.exe echo Please Insert the ProjDoc Disk 3 of 10 in drive A
if not exist a:disk3.exe pause
if not exist a:disk3.exe goto TryAgain_3

echo Copying files to drive %1\MCAR . . .
a:DISK3 /r

cls
echo
echo
echo
echo
echo
echo
echo
```

```
echo
echo
echo
echo                    Insert the ProjDoc Disk 4 of 10 in drive A.
echo
echo
echo
echo
echo
echo
echo
pause

:TryAgain_4
if not exist a:disk4.exe echo This is not ProjDoc Disk 4 of 10
if not exist a:disk4.exe echo Please Insert the ProjDoc Disk 4 of 10 in drive A
if not exist a:disk4.exe pause
if not exist a:disk4.exe goto TryAgain_4

echo Copying files to drive %1\MCAR . . .
a:DISK4 /r

cls
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo                    Insert the ProjDoc Disk 5 of 10 in drive A.
echo
echo
echo
echo
echo
echo
echo
pause

:TryAgain_5
if not exist a:disk5.exe echo This is not ProjDoc Disk 5 of 10
if not exist a:disk5.exe echo Please Insert the ProjDoc Disk 5 of 10 in drive A
if not exist a:disk5.exe pause
if not exist a:disk5.exe goto TryAgain_5

echo Copying files to drive %1\MCAR . . .
a:DISK5 /r

cls
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo                    Insert the ProjDoc Disk 6 of 10 in drive A.
echo
echo
echo
echo
echo
echo
echo
pause

:TryAgain_6
if not exist a:disk6.exe echo This is not ProjDoc Disk 6 of 10
if not exist a:disk6.exe echo Please Insert the ProjDoc Disk 6 of 10 in drive A
if not exist a:disk6.exe pause
if not exist a:disk6.exe goto TryAgain_6

echo Copying files to drive %1\MCAR . . .
a:DISK6 /r

cls
echo
echo
echo
echo
echo
echo
```

```
echo
echo
echo
echo
echo                Insert the ProjDoc Disk 7 of 10 in drive A.
echo
echo
echo
echo
echo
echo
echo
pause

:TryAgain_7
if not exist a:disk7.exe echo This is not ProjDoc Disk 7 of 10
if not exist a:disk7.exe echo Please Insert the ProjDoc Disk 7 of 10 in drive A
if not exist a:disk7.exe pause
if not exist a:disk7.exe goto TryAgain_7

echo Copying files to drive %1\MCAR . . .
a:DISK7 /r


cls
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo                Insert the ProjDoc Disk 8 of 10 in drive A.
echo
echo
echo
echo
echo
echo
echo
pause

:TryAgain_8
echo
if not exist a:disk8.exe echo This is not ProjDoc Disk 8 of 10
if not exist a:disk8.exe echo Please Insert the ProjDoc Disk 8 of 10 in drive A
if not exist a:disk8.exe pause
if not exist a:disk8.exe goto TryAgain_8

echo Copying files to drive %1\MCAR . . .
a:DISK8 /r


cls
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo                Insert the ProjDoc Disk 9 of 10 in drive A.
echo
echo
echo
echo
echo
echo
echo
pause

:TryAgain_9
echo
if not exist a:disk9.exe echo This is not ProjDoc Disk 9 of 10
if not exist a:disk9.exe echo Please Insert the ProjDoc Disk 9 of 10 in drive A
if not exist a:disk9.exe pause
if not exist a:disk9.exe goto TryAgain_9

echo Copying files to drive %1\MCAR . . .
a:DISK9 /r

cls
echo
```

```
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo                    Insert the ProjDoc Disk 10 of 10 in drive A.
echo
echo
echo
echo
echo
echo
echo
pause

:TryAgain_10
if not exist a:disk10.exe echo This is not ProjDoc Disk 10 of 10
if not exist a:disk10.exe echo Please Insert the ProjDoc Disk 10 of 10 in drive A
if not exist a:disk10.exe pause
if not exist a:disk10.exe goto TryAgain_10

echo Copying files to drive %1\MCAR . . .
a:DISK10 /r
a:NOTE /r
cd \mcar\dbf
a:DBF /r

cd\mcar
if not exist auto.bat goto ErrProj
if not exist pd.exe   goto ErrProj
if not exist amsa.exe goto ErrProj
if not exist facility.exe goto ErrProj
if not exist unit.exe goto ErrProj
if not exist ie_proj.exe goto ErrProj
if not exist ie_unit.exe goto ErrProj
if not exist ie_facil.exe goto ErrProj

cd\mcar\dbf
if not exist ar_fyp.dbf  goto ErrProj
if not exist ar_unit.dbf  goto ErrProj
if not exist ar_facil.dbf  goto ErrProj

cd\mcar
cls
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo
echo ProjDoc has been successfully installed.
echo
goto End
:ErrProj
echo
echo ProjDoc is not Installed. Install is aborted.
:End
```

Figure 2.21

2.10.2 Installed Floppy Disk Content. (Figure 2.22.)

```
 DISK 1: fpy.exe
         pd0.ovl
         rrsetup
 DISK 2: facility.exe
         pd2.ovl
```

```
        pd7.ovl
DISK 3: ie_facil.exe
        ie_unit.exe
DISK 4: unit.exe
        minor.rpl
        pd3.ovl
        pd6.ovl
        rrlan.ovl
DISK 5: pd.exe
        pd_path.exe
DISK 6: minor.exe
        pd5.ovl
        wedit.exe
DISK 7: amsa.exe
        auto.bat
        automenu.com
        autotemp.bat
        congen.frm
        cfyp.frm
        fcgen.frm
        fcgenrmk.frm
        fyp.frm
        musgen.frm
        pdip.frm
        probproj.frm
        promcar.frm
        s_congen.frm
        s_fcgen.frm
        t_congen.frm
        t_fcgen.frm
        t_fyp.frm
        lcm.mdf
        program.mdf
        reports.mdf
        utility.mdf
        reports.dbf
        rrunout.dbf
        fyp.win
        minor.win
DISK 8: ie_proj.exe
        error.txt
        pd1.ovl
        pd4.ovl
        pkfyp.exe
        rrsetup.hfc
DISK 9: rrun.exe
        rruntime.exe
        runpath.bat
DISK 10:utility.exe
        note.exe
        ar_amsa.dbf
        ar_calc.dbf
        ar_facil.dbf
        ar_fyp.dbf
        ar_fyp_1.dbf
        ar_guide.dbf
        ar_infos.dbf
        ar_mdep.dbf
        ar_minor.dbf
        ar_note.dbf
        ar_pamsa.dbf
        ar_plnfr.dbf
        ar_reqs.dbf
        ar_untp.dbf
        ar_unit.dbf
        ar_utot.dbf
        fm_1390.dbf
        fm_1391a.dbf
        fm_1391b.dbf
        fm_memo.dbf
        fm_proj.dbf
        fm_unit.dbf
        mcar.dbf
        pe_1390.dbf
        pe_1391a.dbf
        pe_1391b.dbf
        pe_memo.dbf
        pe_proj.dbf
        pe_unit.dbf
        rcas_fac.dbf
        rcas_unt.dbf
        rrunout.dbf
        ar_note.dbt
        fm_memo.dbt
        pe_memo.dbt
```

Figure 2.22

NOTE: 1. Before the files listed above are copied into floppy disks, all files are archived by the command PKARC. To conveniently install, self-extraction is provided by a batch file, SELFARC.BAT. The content of SELFARC.BAT is shown in Figure 2.23.

```
COPY /B pksfx.pgm + %1.arc   %2.exe
```

Figure 2.23

2. There are four laser font files, HV060RPN.USP, HV080IPN.USP, HV100RPN.USP and HV120BPN.USP which can not be sent with the program. Each user must purchase these fonts from HP SOFTFONT (AC). After you get these fonts, put them in the directory, \MCAR\EXE. These fonts are used to print out DD forms on HP LASERJET+(or better).

CHAPTER 3: DATA ENTRY - UNIT, FACILITY, & AMSA

3.1 OVERVIEW

The purpose of UNIT, FACILITY, and AMSA is to let users enter data inventory into the database before they can be used by Backlog, ProjDoc, and other programs.

The unit data entered goes into ar_unit.dbf in which UIC is the key field to identify each record in the file. Furthermore, the index file is created based on the key field to facilitate fast search. In the unit program, unit.prg is the main program which first calls environ.prg to set up program environment and initialize some global variables and then calls di_unitx.prg for four unit data entry screens. In each of the data entry screens, users can search one specific unit's data by entering the UIC. The function of di_unsch.prg is called by each id_unit?.prg to facilitate this purpose.

The facility data entered goes into ar_facil.dbf in which FAC_ID is the key field to identify each record in the file. Furthermore, the index file is created based on the key field to facilitate fast searches. In the facility program, facility.prg is the main program which first calls environ.prg to set up program environment and initialize some global variables and then calls di_facx.prg for five data entry screens. Each of them can call di_fcsch.prg to search facility data by entering facility search criteria attributes.

AMSA is a special kind of facility. Users should first use FACILITY to enter its common facility data and then use AMSA to enter other specific AMSA data. The AMSA data entered goes into ar_amsa.dbf in which FAC_ID is the key field and this FAC_ID should be the FAC_ID generated by FACILITY program. In the AMSA program, amsa.prg is the main program which first calls environ.prg to set up program environment and initialize some global variable and then calls di_amsax.prg for 1 data entry screen. The data entry program, di_amsa1.prg, can call di_fcsch.prg to search facility data too.

3.2 FUNCTIONAL DESCRIPTION

3.2.1 List of Program .PRG Files. Figure 3.1 shows the list of prg files used in the three programs.

List of PRG files

UNIT	FACILITY	AMSA
unit.prg	facility.prg	amsa.prg
environ.prg	environ.prg	environ.prg
pd_index.prg	pd_index.prg	pd_index.prg
pe_index.prg	pe_index.prg	pe_index.prg
ps_index.prg	ps_index.prg	ps_index.prg
di_unitx.prg	di_facx.prg	di_amsa.prg
di_unit1.prg	di_fac1.prg	di_amsa1.prg
di_unit2.prg	di_fac2.prg	di_fcsch.prg
di_unit3.prg	di_fac3.prg	
di_unit4.prg	di_fac4.prg	
di_unsch.prg	di_fac5.prg	
di_fcsch.prg		

Figure 3.1

3.2.2 Program Overall Structures. Figure 3.2 shows the system tree diagram for UNIT.PRG.

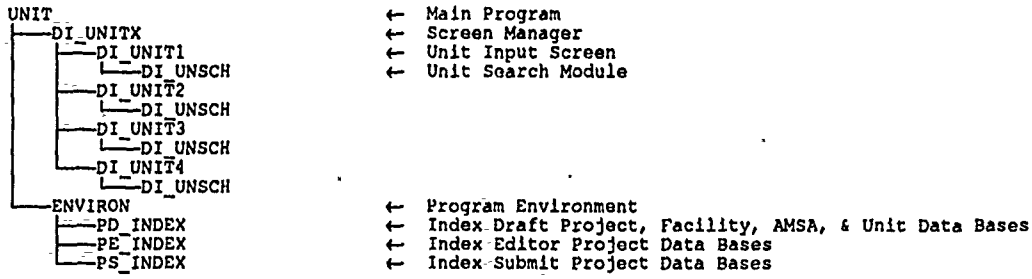


Figure 3.2

Figure 3.3 shows the system tree diagram for FACILITY.PRG.

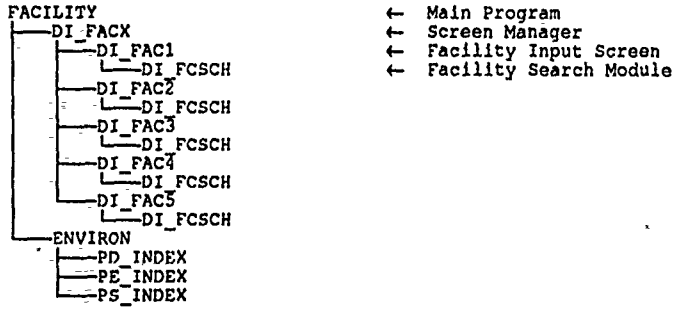


Figure 3.3

Figure 3.4 shows the system tree diagram for AMSA.PRG.

```
AMSA                          <-- Main Program
 |--DI_AMSAX                  <-- Screen Manager
 |   |--DI_AMSA1              <-- AMSA Input Screen
 |   |   |--DI_FCSCH          <-- Facility Search Module
 |--ENVIRON
     |--PD_INDEX
     |--PE_INDEX
     |--PS_INDEX
```

Figure 3.4

3.2.3 QS Optimizer Overlay Specification. Figure 3.5 shows the overlay structure used when linking programs to optimize available memory space. The use of overlays for these three programs is more an exercise in consistency and optimization than necessity. These programs are relatively small compared to ProjDoc and Backlog which have to utilize overlays in order to operate in the 640K DOS environment.

Each of these .spc files will be used to generate a link instruction file when used in conjunction with QS.EXE, the optimizer. Refer to QuickSilver manual for overlay specification file format requirements. The chapter on ProjDoc lists an example link (.lnk) file.

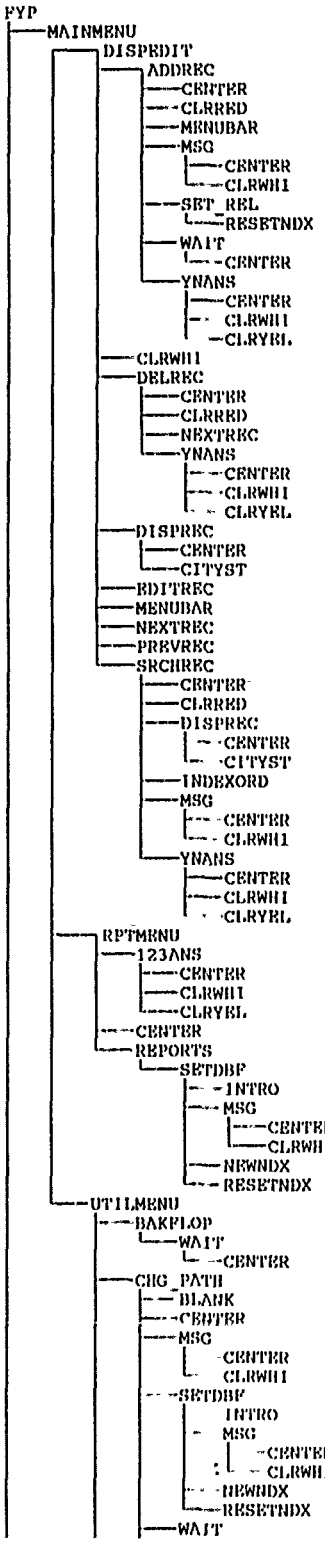
Overlay Specification

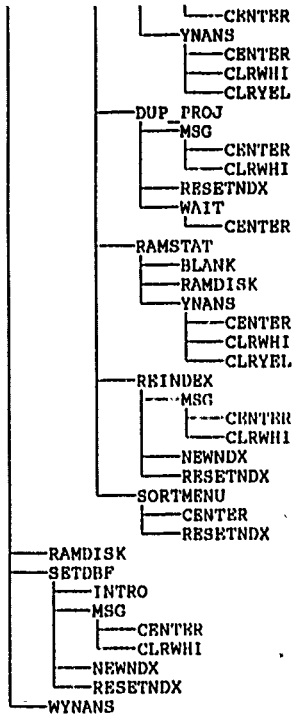
FACILITY.SPC	UNIT.SPC	AMSA.SPC
ROOT: facility;	unit;	amsa;
{		
OVL1: environ,	environ,	environ,
{		
OV11: pd_index;	pd_index;	pd_index;
OV12: pe_index;	pe_index;	pe_index;
OV13: ps_index;	ps_index;	ps_index;
};		
OVL2: di_facx,di_fcsch,	di_unitx,di_unsch,	di_amsax,di_fcsch,di_amsa1;
{		
OV21: di_fac1;	di_unit1;	
OV22: di_fac2;	di_unit2;	
OV23: di_fac3;	di_unit3;	
OV24: di_fac4;	di_unit4;	
OV25: di_fac5;		
};		
}		

Figure 3.5

CHAPTER 4: BACKLOG

4.1 PROGRAM STRUCTURE




└──CENTER
└──YNANS
├──CENTER
├──CLRWHI
└──CLRYEL
├──DUP_PROJ
├──MSG
├──CENTER
└──CLRWHI
├──RESETNDX
└──WAIT
└──CENTER
├──RAMSTAT
├──BLANK
├──RAMDISK
└──YNANS
├──CENTER
├──CLRWHI
└──CLRYEL
├──REINDEX
├──MSG
├──CENTER
└──CLRWHI
├──NEWNDX
└──RESETNDX
└──SORTMENU
├──CENTER
└──RESETNDX
├──RAMDISK
├──SETDBF
├──INTRO
├──MSG
├──CENTER
└──CLRWHI
├──NEWNDX
└──RESETNDX
└──WYNANS

CHAPTER 5: ProjDoc

5.1 OVERVIEW

5.1.1 Functional Overview. The purpose of ProjDoc is to create MCAR project documents for a given MCAR project, from U.S. Army Reserve facility data compiled by the users, along with text written by the user to support the project. The draft documents are used as a model for the finished documents which are bound together for each fiscal year to make up the FY USAR "Green Book." The FY USAR "Green Book" is then submitted to Congress to support the MCAR portion of the Defense Department Budget.

In ProjDoc main menu, there are five options (Figure 5.1). PROJECTS is to initialize a draft project. WORKSHEETS is to calculate authorized facility space requirements and enter data into DA 5034R worksheet, information worksheet, and furniture worksheet. DD FORMS is to edit Green Book documents including editor projects and submit projects. OUTPUT is to print out project documents. UTILITIES is some utility programs. Each of these functions will be further explained separately in subsequent sections.

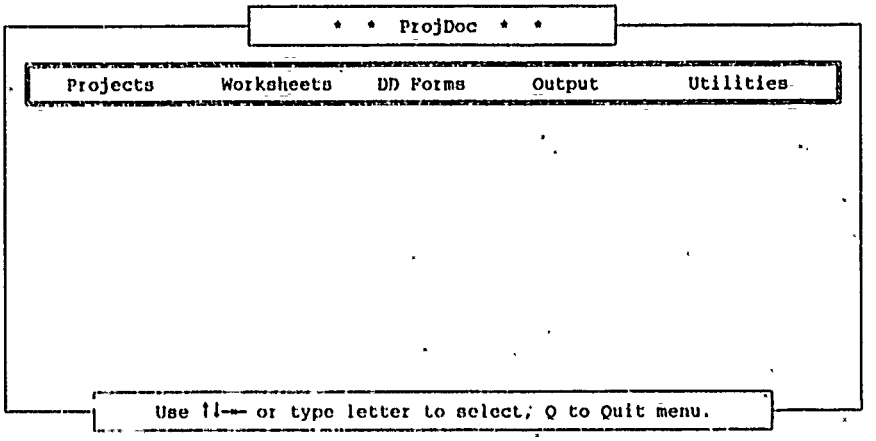


Figure 5.1

5.1.2 Database Structure. To support this project document preparation process, ProjDoc divides its database files into three categories. One is for draft projects, another is for editor projects, and the other is for submit projects. Database files in each category are further divided into sub-files based on the characteristics of fields in order to speed up data access time and avoid the size of files growing too big. Figure 5.2 lists database files in these three project categories:

List Of Database Files In Each Project Category

Draft Project	Editor Project	Submit Project
ar_fyp.dbf	pe_proj.dbf	fm_proj.dbf
ar_plnfr.dbf	pe_unit.dbf	fm_unit.dbf
ar_uatp.dbf	pe_1390.dbf	fm_1390.dbf
ar_pamsa.dbf	pe_1391A.dbf	fm_1391A.dbf
ar_calc.dbf	pe_1391B.dbf	fm_1391B.dbf
ar_reqs.dbf	pe_memo.dbf	fm_memo.dbf
ar_infos.dbf		
ar_utot.dbf		
ar_note.dbf		

Figure 5.2

5.2 FUNCTIONAL DESCRIPTION

5.2.1 Flow Diagram. Like other programs in MCAR LCM Automation, ProjDoc is composed of several programs. At its highest level, pd.prg is the main program which first calls environ.prg to set up environment and initialize global variables. Then it calls signon.prg to display ProjDoc signon screen. Last, it calls pd_bar.prg to invoke ProjDoc main menu. The five options in main menu are then called from pd_bar.prg based on the users selection. Pd_p.prg, pd_w.prg, pd_d.prg, pd_o.prg, and pd_u.prg are the programs for these five options. Figure 5.3 illustrates this highest level program structure.

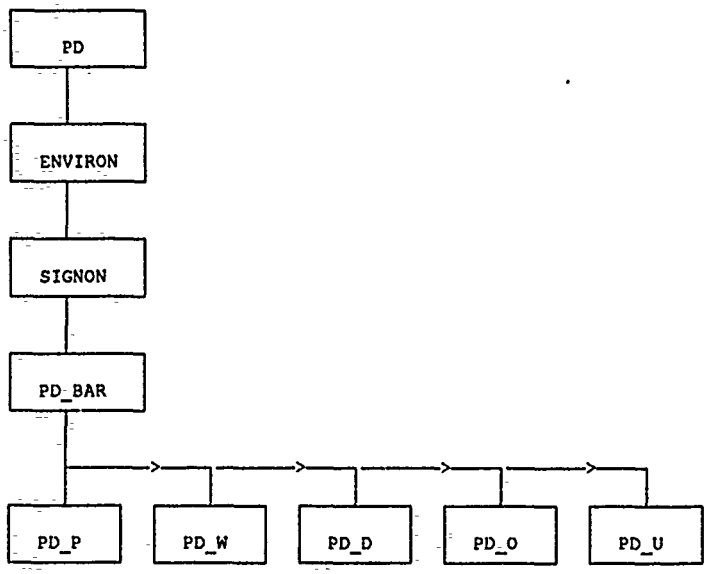
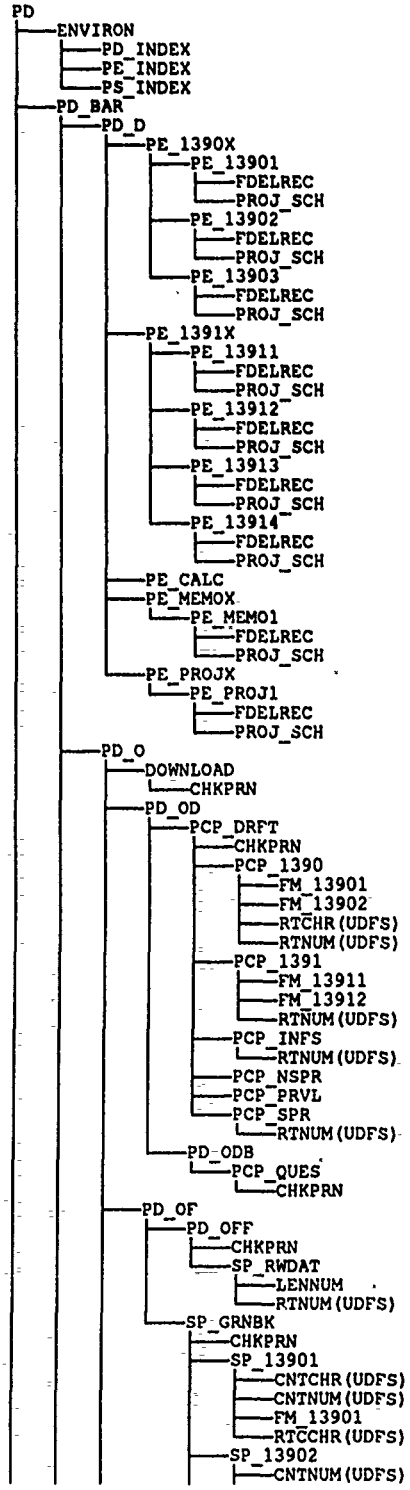
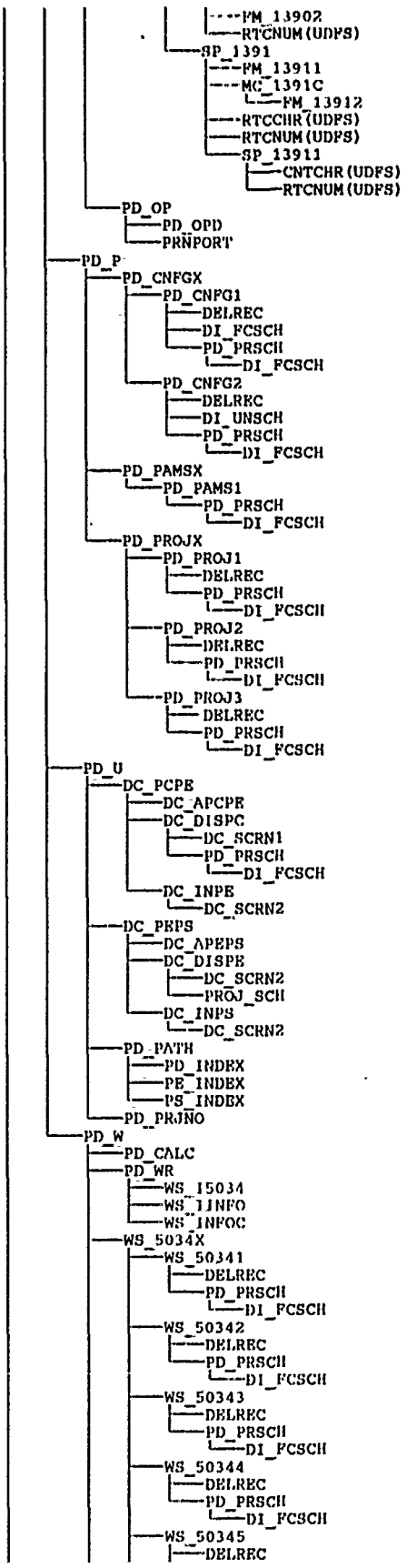


Figure 5.3

5.2.2 Program Structure. Each of these five sub-programs then, in turn, calls its sub-programs to implement different functions that will be discussed later. Figure 5.4 displays the overall program flow diagram of ProjDoc. All of the routines called in Figure 5.4 are maintained in separate prg files on disk. All of the routines followed by (UDFS) are quicksilver user defined functions and are maintained in a file called udfs.prg.




PM_13902
RTCNUM(UDFS)
SP_1391
PM_13911
MC_1391C
PM_13912
RTCCHR(UDFS)
RTCNUM(UDFS)
SP_13911
CNTCHR(UDFS)
RTCNUM(UDFS)
PD_OP
PD_OPD
PRNPORT
PD_P
PD_CNFGX
PD_CNFG1
DELREC
DI_FCSCH
PD_PRSCH
DI_FCSCH
PD_CNFG2
DELREC
DI_UNSCH
PD_PRSCH
DI_FCSCH
PD_PAMSX
PD_PAMS1
PD_PRSCH
DI_FCSCH
PD_PROJX
PD_PROJ1
DELREC
PD_PRSCH
DI_FCSCH
PD_PROJ2
DELREC
PD_PRSCH
DI_FCSCH
PD_PROJ3
DELREC
PD_PRSCH
DI_FCSCH
PD_U
DC_PCPE
DC_APCPE
DC_DISPC
DC_SCRN1
PD_PRSCH
DI_FCSCH
DC_INPE
DC_SCRN2
DC_PEPS
DC_APEPS
DC_DISPE
DC_SCRN2
PROJ_SCH
DC_INPS
DC_SCRN2
PD_PATH
PD_INDEX
PE_INDEX
PS_INDEX
PD_PRJNO
PD_W
PD_CALC
PD_WR
WS_15034
WS_1JNFO
WS_1NFOC
WS_5034X
WS_50341
DELREC
PD_PRSCH
DI_FCSCH
WS_50342
DELREC
PD_PRSCH
DI_FCSCH
WS_50343
DELREC
PD_PRSCH
DI_FCSCH
WS_50344
DELREC
PD_PRSCH
DI_FCSCH
WS_50345
DELREC

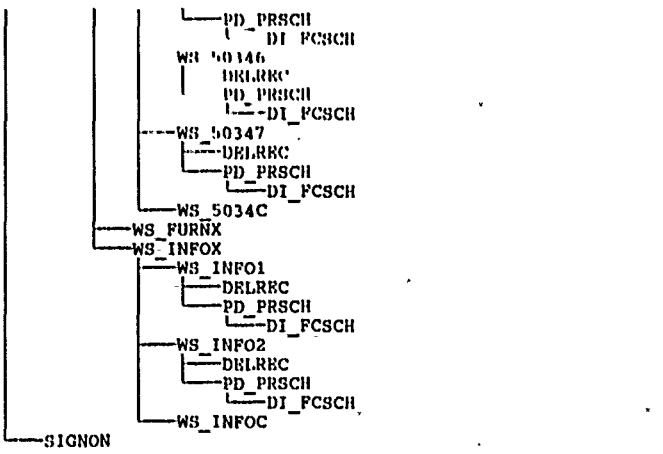


Figure 5.4

5.2.3 Menu Structure. The first menu displayed is called a bar menu, because the options are arranged from left to right, side-by-side, resembling a bar. Once a bar menu option is selected, you will see a pull-down menu. We call it this because it pulls down from the bar menu. This is also known as another level in the menu.

This menu structure is generated from UI2 and its file name is pd.ww. The first window in this file is **signon** which displays the signon message. The next window is **bar** which is the bar menu. There are five options in the bar menu: project, worksheet, DD forms, output, and utilities. The windows for these options are: **p, w, d, o,** and **u**. They are named by their highlighted key letter.

The sub-menus under these pull-down menus are handled similarly except that the window name of previous level menu is prefixed to become their full name. In project, DD forms, and utilities, there are no sub-menus. In worksheet, the only sub-menu is under the option of replace and its name is **wr**. In output, the sub-menus are **od, of,** and **op**. They are under the options of draft, final, and printer respectively. Again the window names for basic project data of draft, final document data of final, and device of printer are **odb, off,** and **opd** respectively.

5.2.4 QS Optimizer Overlay Specification. Since ProjDoc is composed of so many program modules, they cannot be put into main memory at the same time. Figure 5.5 illustrates the quicksilver overlay specification file called pd.spc. Pd.spc is used in conjunction with the quicksilver optimizer to create a plink86 linking overlay instruction file called pd.lnk as shown in Figure 5.6.

```
ROOT: PD,PD_BAR;
{
OVL0(PD0): PD_PRSCH,DI_FCSCH,DELREC,PD_INDEX,PE_INDEX,PS_INDEX,
   {
   OVL1(PD1): ENVIRON,SIGNON;

   OVL2(PD2): PD_P,
      {
      OV21: PD_CNFGx,DI_UNSCH,
         {
         O211: pd_cnfg1;
         O212: pd_cnfg2;
         };
      OV22: PD_PROJX,
         {
         O221: PD_PROJ1;
         O222: PD_PROJ2;
         O223: PD_PROJ3;
         };
```

```
      OV23: PD_PAMSX,PD_PAMS1;
      ];

   OVL3(PD3): PD_W,WS_INFOC,
      [
      OV31: WS_5034X,ws_5034c,
         [
         O311: WS_50341;
         O312: WS_50342;
         O313: WS_50343;
         O314: WS_50344;
         O315: WS_50345;
         O316: WS_50346;
         O317: WS_50347;
         ];
      OV32: WS_INFOX,
         [
         O321: WS_INFO1;
         O322: WS_INFO2;
         ];
      OV33: ws_furnx;
      OV34: PD_WR,
         [
         O341: WS_I5034;
         O342: WS_IINFO;
         ];
      OV35: pd_calc;
      ];

      OVL4(PD4): PROJ_SCH,
         [
         OVL5(PD5): PD_D,FDELREC,
            [
            OV51: PE_PROJX,PE_PROJ1;
            OV52: PE_1390X,
               [
               O521:PE_13901;
               O522:PE_13902;
               O523:PE_13903;
               ];
            OV53: PE_1391X,
               [
               O531: PE_13911;
               O532: PE_13912;
               O533: PE_13913;
               O534: PE_13914;
               ];
            OV54: PE_MEMOX,PE_MEMO1;
            OV55: PE_CALC;
            ];

            OVL6(PD6): PD_U,DC_SCRN2,
               [
               OV61: DC_PCPE,
                  [
                  O611: DC_DISPC,DC_SCRN1;
                  O612: DC_INPE;
                  O613: DC_APCPE;
                  ];
               OV62: DC_PEPS,
                  [
                  O621: DC_DISPE;
                  O622: DC_INPS;
                  O623: DC_APEPS;
                  ];
               OV63: PD_PRJNO;
               OV64: PD_PATH;
               ];
         ];
   ];

OVL7(PD7): PD_O,CHKPRN,PM_13901,PM_13902,PM_13911,PM_13912,RTNUM,
   [
   OV71: PD_OD,RTCHR,
      [
      O711: PD_ODB,PCP_QUES;
      O712: PCP_DRPT,
         [
         E121: PCP_1390;
         E122: PCP_1391;
         E123: PCP_SPR;
         E124: PCP_NSPR;
         E125: PCP_INFS;
         E126: PCP_PRVL;
         ];
      ];
   OV72: PD_OP,RTCCHR,RTCNUM,CNTCHR,CNTNUM,
      [
      O721: SP_GRNBK,
```

```
            [
            R211: SP_13901;
            R212: SP_13902;
            R213: SP_1391;
               [
               R23b: MC_1191C;
               R24c: SP_13911;
               ];
            ];
         O722: PD_OPF,SP_RWDAT;
         ];
      OV73: PD_OP,
         [
         O731: PD_OPD;
         O732: PRNPORT;
         ];
      OV74: DOWNLOAD;
      ];
}
```

Figure 5.5

5.2.5 Linker Overlay Instruction File. Figure 5.6 is a listing of the plink86 format overlay instruction file. This file is automatically generated by qs.exe during the optimization process.

```
OUTPUT  PD.EXE
section = ROOT
file  PD.OBJ,
      PD00.OBJ,
      PD01.OBJ,
      PD02.OBJ,
      PD04.OBJ,
      ROOT0000.OBJ,
      ROOT0001.OBJ
      SEARCH      QSPC1.LIB, QSPC2.LIB, QS.LIB
begin
    section = OVL0 into PD0.OVL file OVL00000.OBJ, OVL00001.OBJ, OVL00002.OBJ,
OVL00003.OBJ, OVL00004.OBJ, OVL00005.OBJ begin
        section = OVL1 into PD1.OVL file OVL10000.OBJ, OVL10001.OBJ
        section = OVL2 into PD2.OVL file OVL20000.OBJ begin
            section = OV21 file OV210000.OBJ, OV210001.OBJ begin
                section = O211 file O2110000.OBJ
                section = O212 file O2120000.OBJ
            end


            section = OV22 file OV220000.OBJ begin
                section = O221 file O2210000.OBJ
                section = O222 file O2220000.OBJ
                section = O223 file O2230000.OBJ
            end


            section = OV23 file OV230000.OBJ, OV230001.OBJ
        end


        section = OVL3 into PD3.OVL file OVL30000.OBJ, OVL30001.OBJ begin
            section = OV31 file OV310000.OBJ, OV310001.OBJ begin
                section = O311 file O3110000.OBJ
                section = O312 file O3120000.OBJ
                section = O313 file O3130000.OBJ
                section = O314 file O3140000.OBJ
                section = O315 file O3150000.OBJ
                section = O316 file O3160000.OBJ
                section = O317 file O3170000.OBJ
            end


            section = OV32 file OV320000.OBJ begin
                section = O321 file O3210000.OBJ
                section = O322 file O3220000.OBJ
            end


            section = OV33 file OV330000.OBJ
            section = OV34 file OV340000.OBJ begin
                section = O341 file O3410000.OBJ
                section = O342 file O3420000.OBJ
            end


            section = OV35 file OV350000.OBJ
        end
```

```
        section = OVL4 into PD4.OVL file OVL40000.OBJ begin
            section = OVL5 into PD5.OVL file OVL50000.OBJ, OVL50001.OBJ begin
                section = OV51 file OV510000.OBJ, OV510001.OBJ
                section = OV52 file OV520000.OBJ begin
                    section = O521 file O5210000.OBJ
                    section = O522 file O5220000.OBJ
                    section = O523 file O5230000.OBJ
                end

                section = OV53 file OV530000.OBJ begin
                    section = O531 file O5310000.OBJ
                    section = O532 file O5320000.OBJ
                    section = O533 file O5330000.OBJ
                    section = O534 file O5340000.OBJ
                end

                section = OV54 file OV540000.OBJ, OV540001.OBJ
                section = OV55 file OV550000.OBJ
            end

            section = OVL6 into PD6.OVL file OVL60000.OBJ, OVL60001.OBJ begin
                section = OV61 file OV610000.OBJ begin
                    section = O611 file O6110000.OBJ, O6110001.OBJ
                    section = O612 file O6120000.OBJ
                    section = O613 file O6130000.OBJ
                end

                section = OV62 file OV620000.OBJ begin
                    section = O621 file O6210000.OBJ
                    section = O622 file O6220000.OBJ
                    section = O623 file O6230000.OBJ
                end

                section = OV63 file OV630000.OBJ
                section = OV64 file OV640000.OBJ
            end

        end

    end

    section = OVL7 into PD7.OVL file OVL70000.OBJ, OVL70001.OBJ, OVL70002.OBJ,
OVL70003.OBJ, OVL70004.OBJ, OVL70005.OBJ,
                    OVL70006.OBJ begin
        section = OV71 file OV710000.OBJ, OV710001.OBJ begin
            section = O711 file O7110000.OBJ, O7110001.OBJ
            section = O712 file O7120000.OBJ begin
                section = E121 file E1210000.OBJ
                section = E122 file E1220000.OBJ
                section = E123 file E1230000.OBJ
                section = E124 file E1240000.OBJ
                section = E125 file E1250000.OBJ
                section = E126 file E1260000.OBJ
            end

        end

        section = OV72 file OV720000.OBJ, OV720001.OBJ, OV720002.OBJ, OV720003.OBJ,
OV720004.OBJ begin
            section = O721 file O7210000.OBJ begin
                section = E211 file E2110000.OBJ
                section = E212 file E2120000.OBJ
                section = E213 file E2130000.OBJ begin
                    section = E23b file E23b0000.OBJ
                    section = E24c file E24c0000.OBJ
                end

            end

            section = O722 file O7220000.OBJ, O7220001.OBJ
        end

        section = OV73 file OV730000.OBJ begin
            section = O731 file O7310000.OBJ
            section = O732 file O7320000.OBJ
```

```
            end

            section * OV74 file OV740000.OBJ
        end

    end
```

Figure 5.6

5.3 PROJECTS

5.3.1 Overall Structure. Projects is used to initialize a draft project. In its sub-menu, there are three options: CONFIGURE, BASIC INFO, and AMSA INFO. As to the program structure, pd_p.prg is the main program which calls pd_cnfgx.prg, pd_projx.prg, and pd_pamsx.prg to invoke these three options. Figure 5.7 illustrates this program structure. Note that all of the screen manager files (e.g., pd_cnfgx, pd_projx, ...) are denoted with an "x" at the end of the file name. All screens managed by the screen manager (e.g., pd_cnfgx) have the same file name but end with the screen number (e.g., pd_cnfg1, pd_cnfg2). This feature facilitates future modification to the number of input screens for each screen manager.

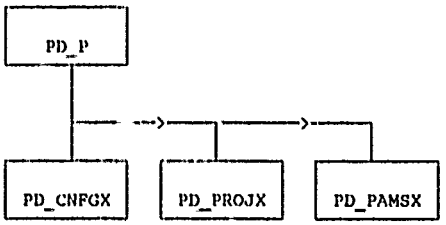


Figure 5.7

5.3.2 CONFIGURE. In CONFIGURE users can edit, delete, or add projects. There are two screens under this program. The first screen is essentially for project and facility information while the second screen is for the project and units information.

Each project has its own unique project number. Once users enter the project number, the program will search ar_fyp.dbf to see whether it is already there. If not, users can add the new project and then specify which facility and units are used for that project. The program will also search ar_facil.dbf and ar_unit.dbf for the facility and units data, respectively. If they are not there, users will be asked whether they want to create a new facility (or unit). Although new facility or unit data can be added at this time, all information entered at this time is only the facility ID or UIC. Users still have to use FACILITY and UNIT to enter other information before project can use them for documentation preparation.

The added new project data will be put into ar_fyp.dbf. In addition, the relation data between the project and the facility will go into ar_plnfr.dbf and the relation data between the project and the units will go into ar_uatp.dbf.

As to the program structure, pd_cnfgx.prg is the main program which calls pd_cnfg1.prg for the first screen process and pd_cnfg2.prg for the second screen process. Pd_cnfg1.prg calls delrec.prg to delete project data, di_fcsch.prg to search facility data, and pd_prsch.prg to search project data.

Pd_prsch.prg also calls di_fcsch.prg to search facility data. The structure for pd_cnfg2.prg is similar except that it calls di_unsch to search units data. Figure 5.8 illustrates this program structure.

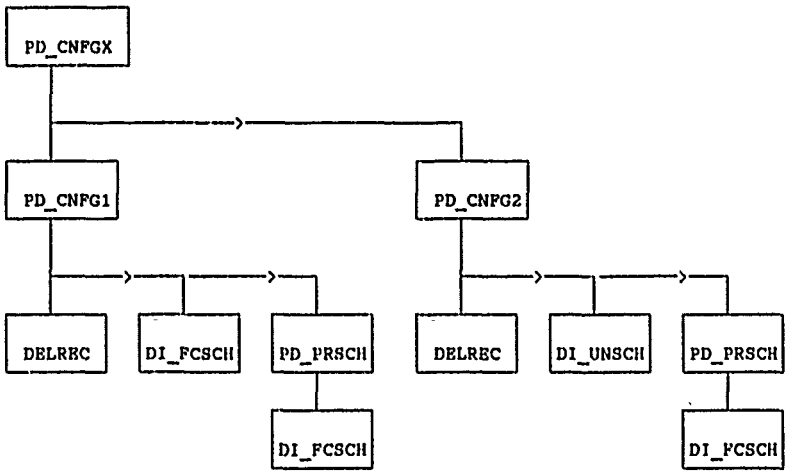


Figure 5.8

5.3.3 BASIC INFO. Basic Information is to let users enter pertinent information about the project. The information needed will be displayed on three different screens. Therefore, pd_projx.prg is the main program of this option and it calls pd_proj1.prg, pd_proj2.prg and pd_proj3.prg to invoke these three screens. The program structure for these three programs is quite similar. They first display the associated screen and then let users search, edit, or delete project information. Delrec.prg deletes projects and pd_prsch.prg searches for projects which in turn calls di_fcsch.prg to search facility data. Figure 5.9 illustrates this program structure.

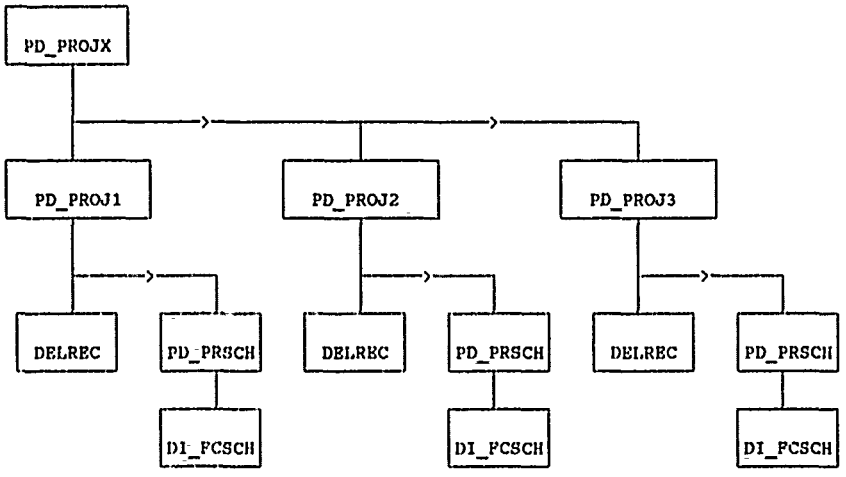


Figure 5.9

5.3.4 AMSA INFO. This function is to let users enter pertinent information to those projects which include an AMSA. There is only one screen; therefore, the program structure is quite simple. Pd_pamsx.prg is the main program which calls pd_pams1.prg to display this screen. Pd_pams1.prg in

turn calls pd_prsch.prg to search project data and then pd_prsch.prg calls di_fcsch.prg to search facility data. The information entered goes into ar_pamsa.dbf database file. Figure 5.10 illustrates this program structure.

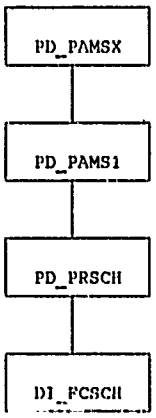


Figure 5.10

5.4 WORKSHEETS

5.4.1 Overall Structure. Once a project is initialized, the next step is to use ProjDoc Worksheets to determine project scope. In WORKSHEETS, there are five options. First, users may select CALCULATE to let the program automatically calculate authorized space allocation based on Army Regulation 140-485. Then they can select DA 5034R, INFO SYSTEM, or FURNITURE to specify their own requirements. Since most project requirements are based on the Army Regulation 140-458, ProjDoc has an option to replace all of the approved requirements with those generated with the calculate option. Then the user may modify individual approved requirements on a case-by-case basis. The purpose of manually replacing approved requirements is to prevent automatic overwriting of previously modified data.

For this menu system, pd_w.prg is the main program which is a pull down sub-menu to invoke its five options based on user selection. Ws_5034x.prg, ws_infox.prg, ws_furnx.prg, pd_wr.prg, and pd_calc.prg are these five sub-programs. Figure 5.11 shows the program structure for this menu.

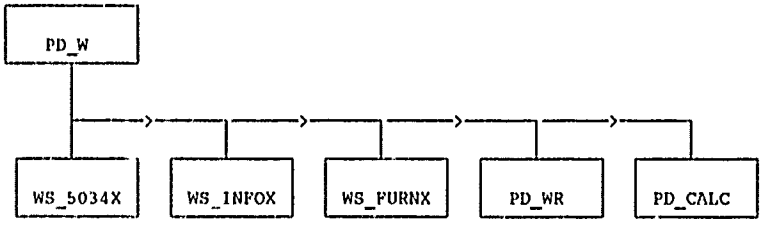


Figure 5.11

5.4.2 DA 5034R. There are seven screens for the DA Form 5034R Worksheets. The layout of each screen is quite similar. It is divided into five columns: Space, Regulation, Approved, Existing, and Justify. Space column lists the individual building areas. Regulation column shows the amount of space allowed based on Army Regulation 140-485. Approved column is where you will enter the

amount of space that you need as approved by your headquarters. Existing column shows the total of the areas in each section. Justify column contains memo fields for justification. The data entered will go into ar_calc.dbf and ar_note.dbf.

Once this option is selected, ws_5034x.prg will be invoked to access related database files, then the first screen will be displayed. Other screens will be displayed if PgUp or PgDn is pressed. Ws_50341.prg to ws_50347.prg are the sub-programs to display these seven screens and ws_5034c.prg is the sub-program to calculate some worksheet subtotal and put them into appropriate database files. Figure 5.12 shows this program structure.

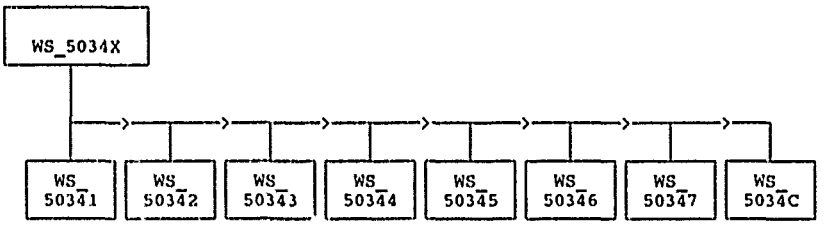


Figure 5.12

5.4.3 INFO SYS. This program works in the same manner as that of DA 5034R worksheet except that it has only two screens. Ws_infox.prg is the main program which calls ws_info1.prg to display first screen, ws_info2.prg to display second screen, and ws_infoc.prg to do some calculation. Figure 5.13 shows this program structure.

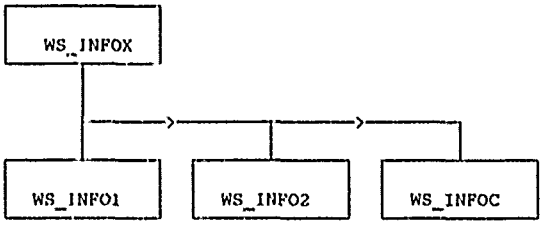


Figure 5.13

5.4.4 FURNITURE. This program has not been implemented yet.

5.4.5 REPLACE. This program will replace the data in the approved column of worksheet with the data in regulation column. Pd_wr.prg is the pull down menu which calls ws_i5034.prg to replace DA 5034R worksheet and ws_iinfo.prg to replace information system worksheet. Figure 5.14 shows the program structure for this menu.

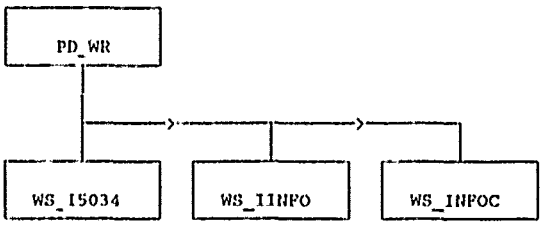


Figure 5.14

5.4.6 CALCULATE. The basis for using the Worksheets is that ProjDoc will calculate the data needed according to the Army Regulation 140-485. This calculation is not automatic and users must ask ProjDoc to do it whenever project input data is changed. This task is done by program pd_calc.prg. This program is written according to the Army Regulation 140-485. Programmers or maintainers should consult it for further detail.

5.5 DD FORMS

5.5.1 Overall Structure. The third step in the ProjDoc project documentation process is DD FORMS. Now the users have to supply ProjDoc with the rest of the information which will go onto the FY USAR Green Book Forms or DD Forms. Before entering the DD Forms information, users must enter the **Utilities** menu and choose the **Draft->Editor** option to convert the project from the draft database to the editor database. The information needed for the forms is distributed in five options: Title Info, DD 1390s, DD 1391, Memos, and Calculate. Each represents a particular group of information. Pd_d.prg is the main program to invoke these five options. Figure 5.15 shows this program structure.

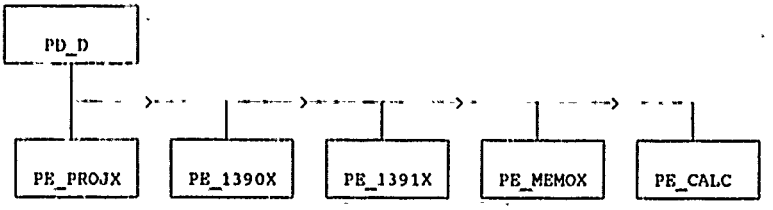


Figure 5.15

5.5.2 TITLE INFO. This option lets users enter the information basic to all of the DD Forms. After that, ProjDoc will fill in all of the appropriate places on the forms. There is only one screen in this option. Pe_projx.prg is the screen manager which calls pe_proj1.prg to display the first screen. The delete and search functions in this screen are further implemented by fdelrec.prg and proj_sch.prg routines. Figure 5.16 shows this program structure.

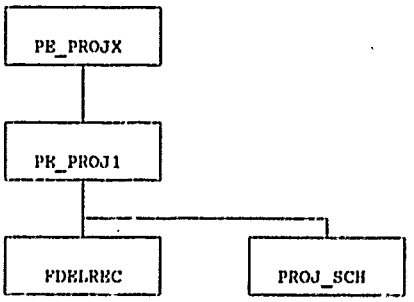


Figure 5.16

5.5.3 DD 1390S. This option lets users fill out the information for the DD Form 1390s page 1 and 2 that will be placed into the FY USAR Green Book document. There are three screens for this option. The program structure is quite similar to that of **TITLE INFO** and is illustrated in Figure 5.17.

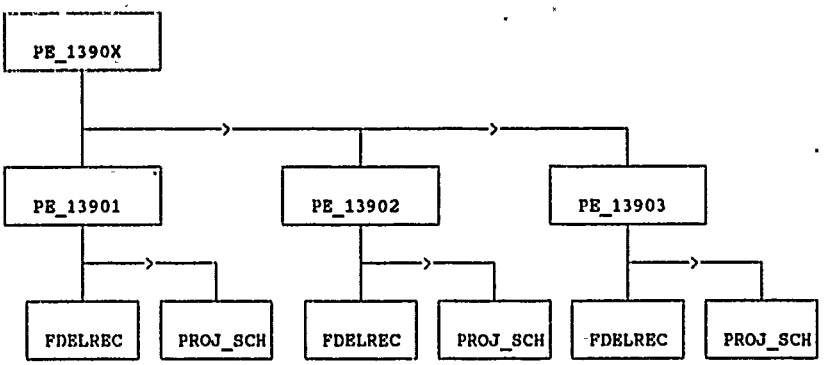


Figure 5.17

5.5.4 DD 1391. This option lets users fill out the information for the DD Form 1391 and DD Form 1391c that will be placed into the FY USAR Green Book document. There are four screens for this option. The program structure is quite similar to that of **TITLE INFO** and is illustrated in Figure 5.18.

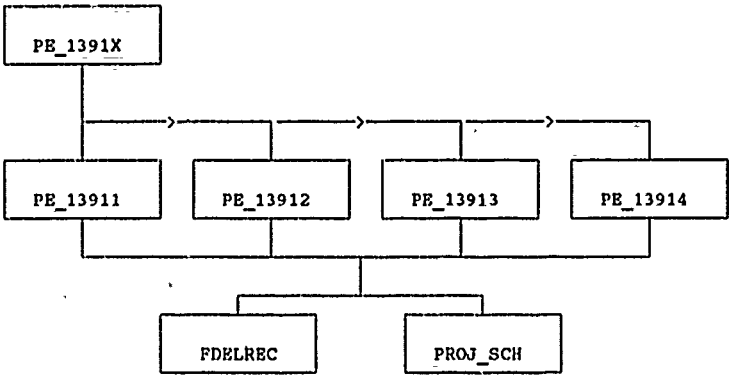


Figure 5.18

5.5.5 MEMOS. This option lets users fill out the memos that will be attached to the DD Forms. There is only one screen for this option. The program structure is quite similar to that of **TITLE INFO** and is illustrated in Figure 5.19.

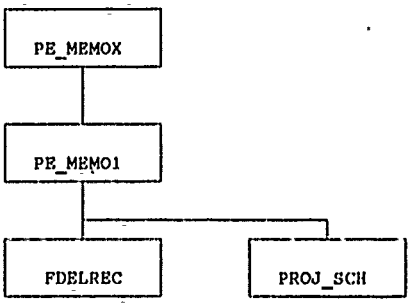


Figure 5.19

5.5.6 CALCULATE. This program does the calculation routines for DD Forms. Pe_calc.prg is the only program.

5.6 OUTPUT

5.6.1 Overall Structure. The final step in ProjDoc is to print out information to hard copy forms. There are four options for this menu: Draft, Final, Printer, and Softfont. Pd_o.prg is the pull down menu which contains thes. four options to let users create the actual documents. Pd_od.prg, pd_of.prg, pd_op.prg, and download.prg are the four programs implementing these options. Figure 5.20 shows this program structure.

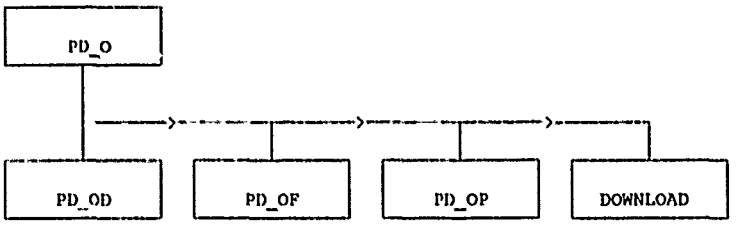


Figure 5.20

5.6.2 DRAFT. There are several different options under this menu. Pd_od.prg is the menu driven program. If users select any option other than **Basic Project Data**, it will call pcp_drft.prg to print out appropriate forms. Otherwise, it will call pd_odb.prg to let users select whether the output goes to screen or printer. Then pcp_ques.prg is invoked for the output.

Based on users' selection, pcp_drft.prg will call different routines to print out appropriate form. Chkprn.prg is the utility to check printer status. If printer is not on, it will display an error message on the screen. Pcp_1390.prg, pcp_1391.prg, pcp_spr.prg, pcp_nspr.prg, pcp_infs.prg, and pcp_prvl.prg are called to print out DD Forms 1390s, DD Forms 1391 & 1391c, DA Form 5034R, Notes for 5034R, Information System, and Project Validation, respectively. The program structure is shown in Figure 5.21.

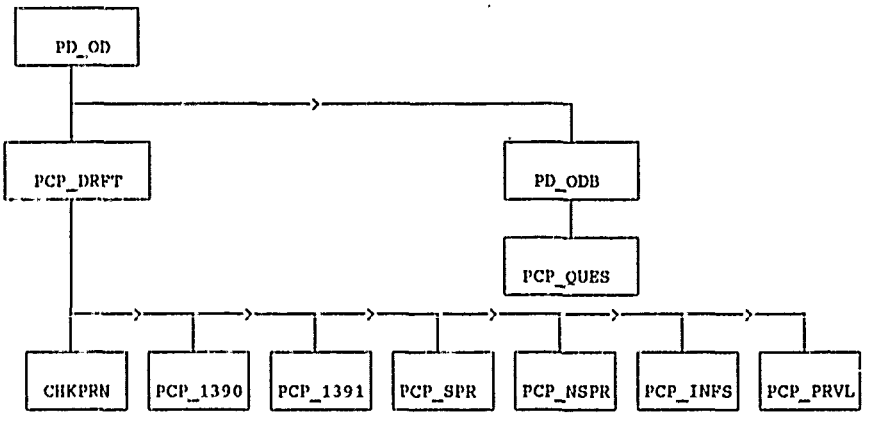


Figure 5.21

5.6.3 FINAL. The program structure is quite similar to that of **Draft**. If users select any option other than **Final Document Data**, pd_of.prg will call sp_grnbk.prg to print out appropriate forms. Otherwise, it will call pd_off.prg to print final document data.

Based on users' selection, sp_grnbk.prg will call sp_13901.prg, sp_13902.prg, or sp_1391.prg to print out DD 1390s\1, DD 1390s\2, or DD 1391 & 1391c, respectively. The program structure is shown in Figure 5.22.

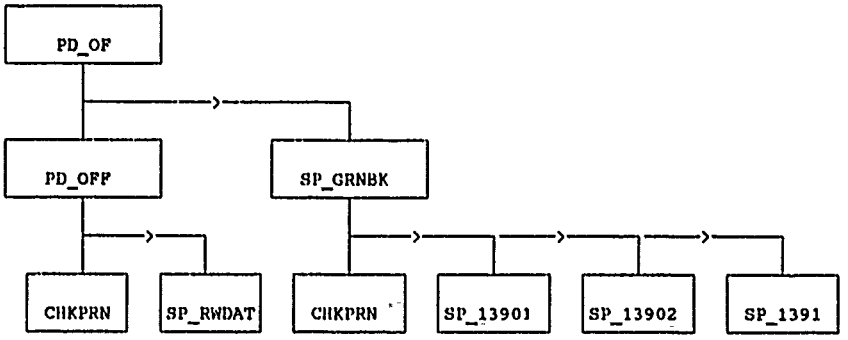


Figure 5.22

5.6.4 PRINTER. Pd_op.prg is the menu program to let users select changing printer devices or ports. Pd_opd.prg is the program to change printer devices while prnport.prg is the program to change printer ports. The program structure is shown in Figure 5.23.

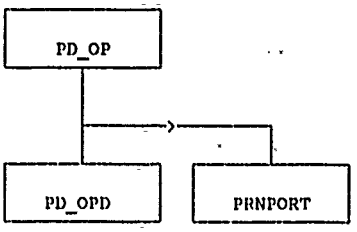


Figure 5.23

5.6.5 SOFTFONT. This option lets users download the printer softfont. Download.prg is the main program which calls chkprn.prg to check printer status. If printer is not on, it will display an error message on the screen.

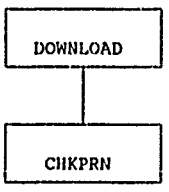


Figure 5.24

5.7 UTILITIES

5.7.1 Overall Structure. The utilities menu contains functions to make ProjDoc easy to use. There are five options: Draft->Editor, Submit Proj, Project #, Files, and Type. Pd_u.prg is the pull down menu. Dc_pcpe.prg is the program to convert a project from draft database to editor database. Dc_peps.prg is the program to convert a project from the editor database to the submit database. Pd_prjno.prg is to change a project number. Pd_path.prg is to tell ProjDoc where the databases are located. Figure 5.25 shows this program structure.

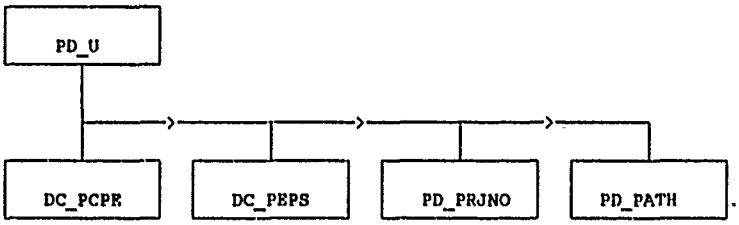


Figure 5.25

5.7.2 DRAFT -> EDIT. This option lets the user convert the project from the draft database to the editor database. Before the conversion, draft project information will first display on the screen to ask the user whether to convert this project. This is done by dc_dispc.prg. If the user answers no, he can fill in some project and/or facility information to search for the project. This is done by pd_prsch.prg and de_fcsch.prg. Then the target project information will be shown on the screen to ask for confirmation (done by dc_inpe.prg). Finally, dc_apcpe.prg will be called to do the actual conversion. The program structure is shown in Figure 5.26.

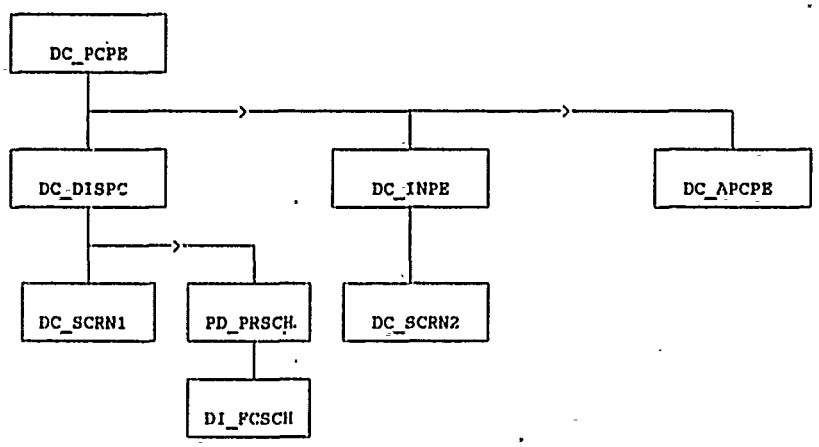


Figure 5.26

5.7.3 EDIT -> SUBMIT. The program structure is quite similar to that of **Draft->Editor** except that it converts project from the editor database to the submit database. The program structure is shown in Figure 5.27.

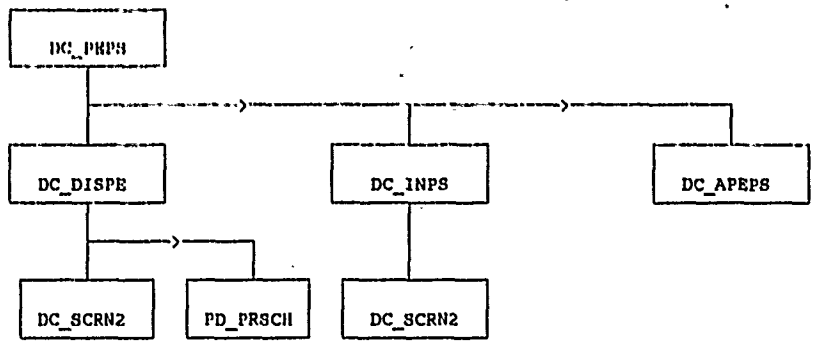


Figure 5.27

5.7.4 PROJECT #. This option is done by pd_prjno.prg. It seeks the whole databases for the project number and then replaces it with the new number.

5.7.5 FILES. Pd_path.prg is the main program asking users for the location of the databases. Then it calls three sub-programs to set index for the databases. The program structure is shown in Figure 5.28.

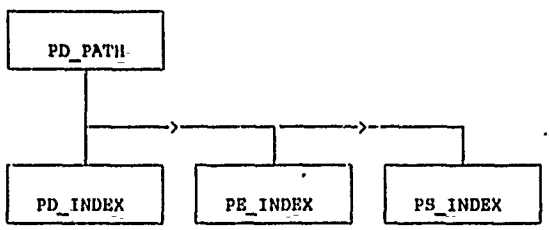


Figure 5.28

5.7.6 TYPE. This option lets the user change database type as used in DD Forms menu and the Output menu. Since only a few program statements need to call this option, it is included in pd_u.prg.

CHAPTER 6: MINOR CONSTRUCTION PROJECTS

6.1 OVERVIEW

The MINOR computer program is a database of Military Construction Army Reserve (MCAR) minor construction projects. It's primary purpose is to manage the minor construction program. The program can easily generate several different reports. It is designed to use data from the Facility database (AR_FACIL) in order to eliminate duplicate data.

6.2 FUNCTIONAL DESCRIPTION

This program can be used as a stand alone program, or run on a Local Area Network (LAN). Approximately 420,000 Bytes of free RAM are required to load this program. The program will automatically use 64,000 Bytes of expanded memory, if available.

Once installed, just type MINOR from the \MCAR subdirectory to start the program. The first time you run the program a window will appear asking you for the drive letter of your RAM disk. (This is the electronic disk drive that has been set up on your computer.) Most of the systems were set up with the "G" drive as the RAM disk, but you may designate any drive as your RAM drive. Just press <Esc> if you do not have a RAM drive. Next you will see a flashing "Indexing" message. The projects are being placed in the proper order (by priority, etc.) for the first time. After indexing, the introduction screen will appear. The program will automatically continue to the main menu.

To execute any menu selection, either highlight the selection using the arrow keys and press <Return>, or press the first letter (or number) of the menu selection. This program is very easy to use if you remember two important points. Whenever a window displays on the screen, read the information and/or instructions in the window. Then, always read the instructions or messages in the box at the bottom of the screen. You will always be asked what to do next, or you will be informed of what is going on in those two locations.

At the main menu you have four selections: Projects, Reports, Utilities and Quit to DOS.

6.3 <P>rojects:

The <P>rojects selection will display all available information about each individual project. When first selected, you will see the first project in the database. The first project displayed will vary depending upon how the database is sorted. To "scroll" through the database, press the <Down Arrow> key to display the next project, or the <Up Arrow> key to display the previous project.

Pressing the <Right Arrow>, <Left Arrow>, or <Spacebar> will move the highlighted bar at the bottom of the screen to another menu selection. Press <Return> on the highlighted menu selection, or press the first letter of the selection to execute the command.

6.3.1 <S>earch - Will allow you to find a project using any information that you happen to know about the project. (e.g. Fiscal Year, Priority, City, Title, etc.)

Just enter the information that you want to look for. The program will display the first project it finds that meets the criteria that you entered. Not all fields need to be filled in. In fact, the program will find matches for partial fields. For example, if you enter "jack" in the city field, the program will find "Jackson", "JACKSONVILLE", or any other city with the four letters J-A-C-K in sequence. You will be asked if you want to continue searching. If you press "Y" for Yes, the program will continue looking for the next project that meets your criteria. If you press "N" for No, the last project located will be displayed.

The Priority field is used to conduct a "Quick Search". If information is entered in this field, all other fields will be ignored. If the requested priority exists, it will be found almost instantly.

6.3.2 **<E>**dit - Will allow you to change most of the information about the displayed project. Information that is displayed from another database (e.g. City, State, etc.) cannot be changed from the MINOR program.

6.3.3 **<A>**dd - Will allow you to add a new project to the database. You must enter both a Project Number and Facility ID before you can enter a new project! The project number will be checked to make sure that it is not already being used. The Facility ID will be checked to make sure that the facility exists. If the facility ID does not already exist, it must be added using the Facility program or Proj Doc program.

6.3.4 **<D>**elete - Will allow you to delete the project being displayed. You will be asked to verify that you POSITIVELY want to delete the project that is being displayed.

6.3.5 **<F>**irst - Takes you to the first project in the database. (The first project may vary depending on how the database is sorted.)

6.3.6 **<L>**ast - Takes you to the last project in the database. (The last project may vary depending on how the database is sorted.)

6.3.7 **<Q>**uit - Will exit the "scroll mode" and return you to the main menu.

6.4 **<R>**eports:

All reports are generated using R&R Relational Report Writer. Reports can either be displayed on the screen, or printed on your printer. The following reports are available:

6.4.1 **<1>** Project CWE & PA - This report includes the Fiscal Year, Priority, Project Number, City, State, CWE, and PA. The total CWE and PA are displayed at the bottom of the report.

6.4.2 **<2>** Problems & Remarks - This report includes the Fiscal Year, Priority, Project Number, City, State, Problem flag, and both Remarks fields.

6.4.3 **<3>** Funding Information - This report includes the Fiscal Year, Priority, and Project Number. It also includes the Cost, Date Provided, Program Year, Returned dollars, and Date returned, for both Construction and Design Funds. The total Construction and Design Costs are displayed at the bottom of the report.

6.4.4 <4> Other Agencies - This report includes the Fiscal Year, Priority, Project Number, City, State, MACOM, CONUSA, Installation, and Corps District.

6.4.5 <5> Important Dates - This report includes the Fiscal Year, Priority, Project Number, City, State, Date Project Approved, Date Project Closed, Date Design Completed, and Date Project Completed.

6.4.6 <6> Type Projects - This report includes the Fiscal Year, Priority, Project Number, City, State, Specified Project, and Type Project.

After selecting your report, you are asked to "<D>isplay or <P>rint Report? (D/P)." If you answer "D" (the default, for Display), the report will be displayed on the screen. If you answer "P" (for Print), the report will be printed on your printer. Make sure your printer is turned on, on-line, and has paper. You will see a warning message if your printer is not ready. The default printer configuration is set up for an Epson (or compatible) printer. Run RRSETUP to change the printer configuration.

Next you are asked to select either "<A>ll, <S>pecified, or <U>nspecified?" projects to include in the report. Press "A", "S" or "U" to indicate which projects to select. Each report will indicate the number of records selected at the bottom of the report.

6.5 <U>tilities:

The utilities perform basic program and system maintenance, and are described below:

6.5.1 <S>ort Projects - This is where you decide in what order you want the information displayed. The bottom of the Sort Menu displays the current sorted order of the database.

NOTE: The database will remain sorted in the order you select until you change it again using this sort utility.

The following sorts are available:

<1> Priority (Only) - Sorted by Priority.

<2> FY & Priority - Sorted first by Fiscal Year, then within each Fiscal Year by Priority.

<3> FY, State, City - Sorted first by Fiscal Year, then within each Fiscal Year by State, then within each State by City.

<4> State, City - Sorted first by State, then within each State by City.

<5> City - Sorted by City.

<6> CWE (Only) - Sorted by CWE.

6.5.2 <B>ackup to Floppy - Allows you to make a backup copy of your data file (AR_MINOR.DBF) to a floppy disk. *Use this utility frequently to safeguard your data!!*

6.5.3 <M>emory (RAM) Status - Displays the currently selected RAM drive, and the number of bytes of available conventional RAM.

6.5.4 <R>eindex Database - Occasionally the index files may become corrupted, especially if the data file is used outside of the MINOR program using dBASE. This selection will reindex all the existing index files and put everything back into proper order.

6.5.5 <D>uplicate Check - Checks all project numbers for duplicates. Pauses and displays project number if any duplicates are found. *Duplicate project numbers may cause unreliable program execution!*

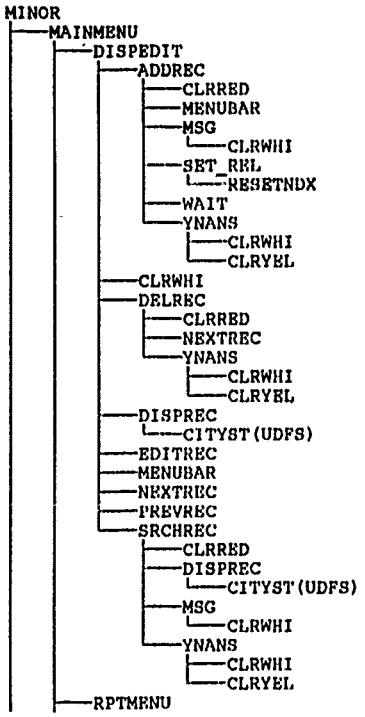
6.5.6 <C>hange Data Path - The default data path is the \DBF subdirectory under the subdirectory from which the program is executed. Normally the program will be executed from the \MCAR subdirectory, and the data will be in the \MCAR\DBF subdirectory of your hard disk. You may wish to copy this data to a RAM drive or other location on your hard disk to make temporary changes, etc. Use this utility to tell the program where the data files are located if you move them. New index files (.NDX) will automatically be created if they are not found with the data files.

Remember that the following data files must all be located in the same place: AR_MINOR.DBF, AR_PLNFR.DBF and AR_FACIL.DBF.

6.6 <Q>uit to DOS:

This selection is used to exit the MINOR program and return to the Disk Operating System (or menu if the program was started from a menu). You will be asked "Are you sure? (Y/N)." Press "Y" to exit the program, or "N" to return to the main menu.

6.7 Program Structure



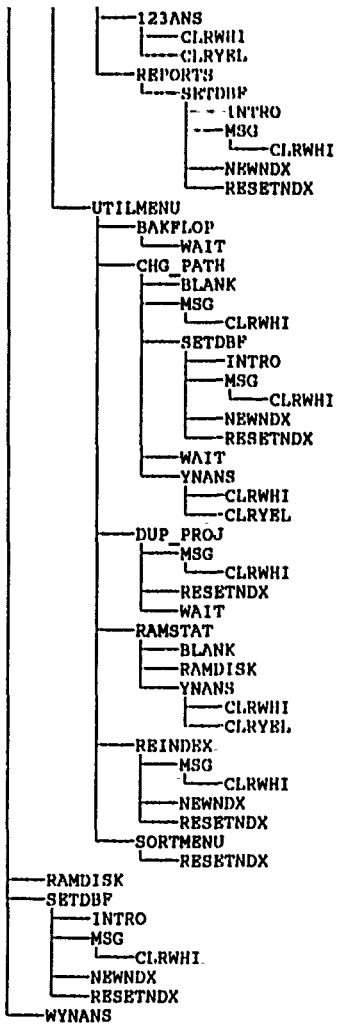

123ANS
CLRWHI
CLRYEL
REPORTS
SETDBF
INTRO
MSG
CLRWHI
NEWNDX
RESETNDX
UTILMENU
BAKFLOP
WAIT
CHG_PATH
BLANK
MSG
CLRWHI
SETDBF
INTRO
MSG
CLRWHI
NEWNDX
RESETNDX
WAIT
YNANS
CLRWHI
CLRYEL
DUP_PROJ
MSG
CLRWHI
RESETNDX
WAIT
RAMSTAT
BLANK
RAMDISK
YNANS
CLRWHI
CLRYEL
REINDEX
MSG
CLRWHI
NEWNDX
RESETNDX
SORTMENU
RESETNDX
RAMDISK
SETDBF
INTRO
MSG
CLRWHI
NEWNDX
RESETNDX
WYNANS

Figure 6.1

CHAPTER 7: USAR LCM AUTOMATION UTILITIES

7.1 OVERVIEW

USAR LCM utilities are a set of programs designed to help the user maintain and manage the data base on disk. Figure 7.1 shows the utility programs included with LCM software: Database Directory, Data File Maintenance, Project Import/Export, Facility Import/Export, and Unit Import/Export.

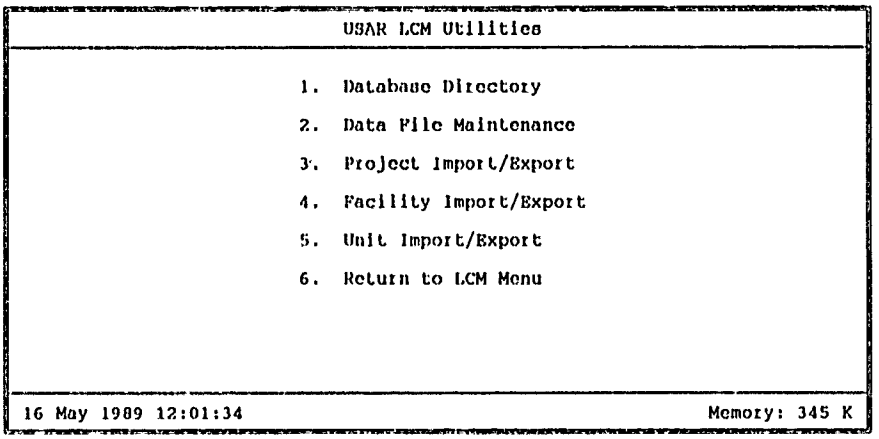


Figure 7.1

7.2 DATABASE DIRECTORY

The objective of Database Directory is to specify the DOS directory containing the MCAR Database.

7.3 DATA FILE MAINTENANCE

The objective of Data File Maintenance is to pack, sort, and index the data files. After a long time of using LCM software, databases may need to be packed, sorted, or reindexed so that the program can work more efficiently. The Data File Maintenance program has four options; Full-Scale Maintenance, Clean Up Data Files, Sort Data Files, Index Data Files.

The purpose of Full-Scale Maintenance is to physically clean up all records previously marked for deletion, sort remaining records, and then reindex all the data files on their key index. Clean Up Data Files will only clean up records previously marked for deletion and then reindex the data files. Sort Data Files will only sort all data and reindex them. Index Data Files will only reindex all data in the database. Another method to reindex the data files is to simply delete from the hard disk all the .ndx files. All the major LCM programs will test for the existence of the index file and reindex if they do not exist. Figure 7.2 lists the system tree for the Data File Maintenance option in the USAR LCM utilities.

```
UTILITY
├──ENVIRON        ←Setup initial environment and test for reindexing
│   ├──PD_INDEX
│   ├──PE_INDEX
│   └──PS_INDEX
├──ON_ERROR       ←Error trapping routine.  Allows for gentle bombing of program
├──ON_ESC         ←ESC key trapping.  Exit on ESC key being initiated
└──UTI_BAR        ←Menu bar managing options
    ├──UT_CLNUP   ←Packs records, removes those marked for deletion
    ├──UT_INDEX   ←Indexes all databases, sam as PD_INDEX, PE_INDEX and PS_INDEX
    └──UT_SORT    ←Physically sorts data on key index field
```

Figure 7.2

7.4 IMPORT/EXPORT UTILITIES

The purpose of the three import/export utilities is to facilitate the exchange of records between computers and/or directories. The user can export individual projects, facilities, and/or units one record at a time or by global search conditions such as city and state.

7.4.1 Project Import/Export copies project records from a source directory to a target directory. It does so by also copying the facility record associated with the project together with the unit records associated with it.

In the Source Directory slot, type the DOS directory containing the databases you want to export and press [Enter]. Then in the Target Directory, type the DOS directory to which you want to export the databases and press [Enter]. After that, Figure 10.6 will be shown on the screen to let you search the projects you want to export.

You can select to export the current project only, or to export all projects that fit the search criterion with each one confirmed before exporting, or to export all projects that fit the search criterion without confirmation.

Figure 7.3 lists the system tree diagram for the Project Import/Export utility.

```
IE_PROJ
├──IE_DIR
├──IE_PRSCH
│   ├──IE_DUPL
│   ├──IE_POP
│   └──IE_PTALL
│       ├──MVMEMO(PROC)
│       ├──MVWFACID(PROC)
│       └──MVWPROJ(PROC)
├──PD_INDEX
├──PE_INDEX
└──PS_INDEX
```

Figure 7.3

7.4.2 Facility and Unit Import/Export utilities copy facilities and unit records respectively from a source directory to a target directory. If the target directory does not contain the files to house a MCAR database any of the three Import/Export utilities will create it at the time of exporting the first record. Figure 7.4 lists the system tree for Facility Import/Export utility and Figure 7.5 lists the system tree for Unit Import/Export utility.

Figure 7.4

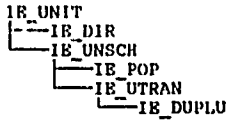


Figure 7.5

APPENDIX A: TERMS & ABBREVIATIONS

TERMS

Addition-Expansion-Extension
A physical increase to a real property facility which adds to an overall external dimension of the facility.

Alteration
Work required to change interior configuration or other physical characteristics of an existing facility so that it may be more effectively adapted to or utilized for its presently designated functional purpose. This also may include equipment installed in and made part of an existing facility.

Annual Training (AT) Site
A training area used for the 14-day tour of full time training of Reserve Components' units and individuals; includes all improvements on land. (Examples of AT sites are barracks, storage areas, hardstands, maintenance shops, and special training facilities.

Area Maintenance Support Activity (AMSA)
A USAR activity established to provide, on an area basis, technical assistance and organizational support, which is beyond the supported unit's capability to accomplish during scheduled training assemblies.

Armed Forces Reserve Center (AFRC)
A facility in which units of two or more Military Departments or Army National Guard are permanently stationed for inactive duty training (IDT) and administration.

Common-use Areas
Areas of a USARC provided for the use of all assigned units.

Construction
The erection, installation, or assembly of a new facility, the addition, expansion, extension, alteration, conversion, or replacement of an existing facility or the relocation of a facility from one installation to another. This also includes equipment installed and made part of such a facility, related site preparation, excavation, filling and landscaping, or other land improvements. Construction type, classified by design life (AR 405-45, para 1-6) are:

a. Temporary - 5 years or less
b. Semi-Permanent - 5 to 25 years
c. Permanent - more than 25 years.

Construction Project
A single action applicable to one or more real property facilities that will include all construction work, land acquisition, and items of installed equipment. Such action is taken for a specific purpose and to produce a complete and usable property facility or a complete improvement to a real property facility.

Conversion
The work required to change functional use of interior arrangements or other physical characteristics of a facility or any part thereof. This includes installed equipment that may be used for a new functional purpose.

Equipment Concentration Site (ECS)
An equipment storage area under the jurisdiction of a Major U.S. Army Reserve Command (MUSARC) commander and under the supervision of an AMSA. The ECS may contain USAR unit equipment needed for training during scheduled training assemblies, but beyond the unit's capability to store at home station or certain equipment required for WET site. Normally, equipment of more than one USAR unit is stored at the ECS.

Exclusive Use Areas
Areas of a USARC or AFRC provided for the exclusive use of each assigned unit.

Facility
A Real Property Facility (RPF) to include any interest in land, buildings, other structures, or training sites.

Joint Construction
The combined efforts of two or more military components or services to construct a facility. One participant acts as the design and construction agent while costs are prorated.

Joint use Areas
Areas of an AFRC provided for the use of all assigned units of the Services.

Organizational Maintenance Shop
The structure used to train organizational maintenance personnel and to perform organizational level maintenance on USAR unit equipment.

Maintenance
The day-to-day, periodic, or scheduled work required to preserve or maintain a facility in such condition that it may be effectively used for its functional purposes.

MAR Program
A program through which the USAR acquires new facilities and replacement or improvement of existing facilities by purchase, transfer, or construction. This program also includes expansion, rehabilitation, conversion, and equipping of such facilities.

Real Property
Land and rights therein, ground improvements, utility systems, and structures, excluding installed equipment.

Repair
The restoration of a facility to such condition that it may be effectively utilized for its designated purpose. Repair may be accomplished by overhaul, reprocessing, or replacement of components or materials which have deteriorated by actions of the elements or wear and tear in use and which have not been corrected through maintenance.

Replacement
A complete reconstruction of a facility destroyed or run down beyond the point where it may be repaired economically.

Reserve Component (RC)
The Reserve Components are composed of the Army and Air National Guard and the reserve Forces of the Uniformed Services. These are referred to collectively as the Reserve Components.

U.S. Army Reserve Center
Facility in which one or more USAR units are stationed by permanent order for IDT and administration.

Weekend Training (WET) Site
A training area in reasonable proximity to the unit's permanent station; may include austere improvements.

ABBREVIATIONS

AFRC: Armed Forces Reserve Command

AMSA: Area Maintenance Support Activity

CAR: Chief, Army Reserve

CONUSA: The numbered armies in the Continental United States

DARR-CM: Construction Management Office, Office of the Chief, Army Reserve

ECS: Equipment Concentration Site

FORSCOM: United States Army Forces Command

MACOM: Major Army Command

MCAR: Military Construction, Army Reserve (appropriation)

MMCAR: Minor Military Construction, Army Reserve

MTOE: Modified Table of Organization and Equipment

MUSARC: Major United States Army Reserve Command

OCAR: Office of the Chief, Army Reserve

OMAR: Operations and Maintenance, Army Reserve (appropriation)

USAR: United States Army Reserve

WESTCOM: United States Army Western Command

APPENDIX B: DATA DICTIONARY

DATA DICTIONARY CONTENTS

B.1 AR_AMSA

Alias: AR_AMSA
Description: Facility AMSA Information
Key Field: FAC_ID
11 Fields defined:

Name	Type	Length	Description
AMSA_ADMIN	N	3	Number of recongized AMSA administrative persons
AMSA_MCTEC	N	3	Number of recognized AMSA auto of engineering/specified equipment mechanics
AMSA_MECH	N	3	Number of recognized AMSA mechanics
AMSA_NO	C	4	AMSA number
AMSA_RCPER	N	3	Total number of AMSA recognized personnel
AMSA_VSUP	N	4	Number of vehicles supported but not stationed at AMSA
COMMO_TEC	N	3	Number of recognized AMSA communication/electronic technicians
FAC_ID	C	5	Facility ID where AMSA is located (key field)
INSTR_TEC	N	3	Number of recognized AMSA instrument repair technicans
OTHER_PER	N	3	Number of recognized AMSA other personnel
SMARM_TEC	N	3	Number of recognized AMSA small arms repair technicans

--Index 1:

Name: AR_AMSA
Expression: FAC_ID

--Relation 1:

Name: AR_FACIL
Expression: FAC_ID

B.2 AR_FACIL

Alias: FAC
Description: Army Reserve Facility Information
Key Field: FAC_ID
62 Fields defined:

Name	Type	Length	Description
AFRC	L	1	Armed forces reserve center
AMSA	L	1	Area maintenance support activity
AMSA_NO	C	4	AMSA number servicing this facility (do not use - invalid field)
AO_CONUSA	C	20	CONUSA action officer
AO_FORSCOM	C	20	FORSCOM action officer
AO_MUSARC	C	20	MUSARC action officer
AO_OCAR	C	20	OCAR action officer
BAND	L	1	Band room at facility
CONG_DIST	C	15	Congressional district
CONUSA	C	1	Continental United States Army
DAYS_FTP	N	1	Number of days/week center scheduled for full time personnel
DISTANCE_1	N	4	District of other active/guard/reserve within 25 miles radius
DISTANCE_2	N	4	District of other active/guard/reserve within 25 mile radius
DISTANCE_3	N	4	District of other active/guard/reserve within 25 mile radius
DISTANCE_4	N	4	District of other active/guard/reserve within 25 mile radius
DRAFT	L	1	Drafting room
DS_GS	L	1	Direct support of general support
EXFAC_COST	N	8	Cost of existing facility
EXISH_COST	N	8	Cost of existing shop
EXIST_SHOP	N	6	Existing maintenance shop size in gross square footage
EXIST_SIZE	N	7	Existing center size in gross square footage
EX_ADMIN	N	6	Existing administrative area size in net square footage
EX_ASMBLY	N	6	Existing center assemble area size in net square footage
EX_EDUC	N	6	Existing education area size in net square footage
EX_STORE	N	6	Existing storage area size in net square footage
EX_SUPPORT	N	6	Existing support area size in net square footage
FACILITY_1	C	14	Other active/guard/reserve within 25 mile radius
FACILITY_2	C	14	Other active/guard/reserve within 25 mile radius
FACILITY_3	C	14	Other active/guard/reserve within 25 mile radius
FACILITY_4	C	14	Other active/guard/reserve within 25 mile radius
FAC_CITY	C	23	City where facility is located
FAC_ID	C	5	Facility ID number (key field)
FAC_STATE	C	2	State where facility is located
FAC_STREET	C	30	Street address of facility
FAC_TITLE	C	30	Facility title
FAC_ZIP	C	10	Zip code of facility
GOCONF	L	1	General officer conference room
INSTCLASS	L	1	Instructor classroom
LOCATION_1	C	25	Location of other active/guard/reserve within 25 mile
LOCATION_2	C	25	Location of other active/guard/reserve within 25 mile
LOCATION_3	C	25	Location of other active/guard/reserve within 25 mile
LOCATION_4	C	25	Location of other active/guard/reserve within 25 mile
MED	L	1	Medical section training and storage
MUSARC	C	20	MUSARC
NITE_WEEK	N	1	Number of nights/week center scheduled for reservists
OMS	L	1	Organizational maintenance shop
PHOTO	L	1	Photo lab
PHYEX	L	1	Physical examining section
RANGE	L	1	Suitable firing range within 60 miles or 90 minutes
SCIF	L	1	Sensitive compartmented information facility
SOIL	L	1	Soil testing lab
SPT_INST	C	15	Support installation
TELE_CITY	C	20	City location of facility telephone company
TELE_CO	C	25	Telephone company of facility
TELE_PHONE	C	14	Telephone number of facility telephone company
TELE_ST	C	30	Street location of facility telephone company
TELE_STATE	C	2	State location of facility telephone company
TELE_ZIP	C	10	Zip code of facility telephone company
USARC	L	1	United States Army Reserve Center
USARF	L	1	United States Armed Forces Storage
WEND_RES	N	1	Number of weekends/month center scheduled for reservists
PROPOSED	L	1	Proposed facility

--Index 1:

Name: AR_FACIL
Expression: FAC_ID

--Relation 1:

Name: AR_PLNFR
Expression: FAC_ID

B.3 AR_INFOS

Alias: AR_INFOS
Description: Project Information System Information
Key Field: PROJ_NO
31 Fields defined:

Name	Type	Length	Description
IS_AUAMSCE	N	1	One telephone authorized for AMSA communication/electronic shop
IS_AUAMSCL	N	1	One telephone authorized for AMSA classroom
IS_AUAMSIR	N	1	One telephone authorized for AMSA instrument repair shop
IS_AUAMSSA	N	1	One telephone authorized AMSA small arms repair shop
IS_AUAMSSH	N	2	Number of telephones authorized AMSA shop office
IS_AUFLTIM	N	3	Number of telephones authorized full time employees
IS_AUFRALM	N	1	One fire alarm authorized per center
IS_AUIDSJS	N	1	One IDS/JSIDS authorized per center
IS_AUOMSSH	N	3	Number of telephones authorized for OMS shop office
IS_AURETEN	N	1	One retention authorized per center
IS_AUSPOFF	N	2	Number of telephones authorized per supply office
IS_AUTOTIN	N	4	Number of total authorized instruments at center
IS_AUUNTCM	N	3	Number of telephones authorized for personnel with common office space
IS_AUUNTEX	N	3	Number of telephones authorized for personnel with exclusive office space
IS_ESTIMAT	N	6	Estimate cost of instruments at center
IS_RQAMSCE	N	1	Telephones requested per AMSA communication/electronic shop
IS_RQAMSCL	N	1	Telephones requested per AMSA classroom
IS_RQAMSIR	N	1	Telephones requested per AMSA instrument repair shop
IS_RQAMSSA	N	1	Telephones requested per AMSA small arms repair shop
IS_RQAMSSH	N	2	Telephones requested for AMSA shop office
IS_RQFLTIM	N	3	Telephones requested for full time employees
IS_RQFRALM	N	1	Number of requested fire alarms
IS_RQIDSJS	N	1	Number of requested IDS/ASID per center
IS_RQOMSSH	N	3	Number of requested telephones for OMS shop office
IS_RQRETEN	N	1	Number of requested retention per center
IS_RQSPEC	N	2	Special requests to justified on enclosure
IS_RQSPOFF	N	2	Number of requested telephones for supply offices
IS_RQTOTIN	N	4	Total number of requested instruments
IS_RQUNTCM	N	3	Number of telephones requested for personnel with commom office space
IS_RQUNTEX	N	3	Number of telephones requested for personnel with exclusive office space
PROJ_NO	C	5	Project number (key field)

--Index 1:

Name: AR_INFOS
Expression: VAL(PROJ_NO)

--Relation 1:

Name: AR_FYP
Expression: PROJ_NO

B.4 AR_PAMSA

Alias: AR_PAMSA
Description: Project AMSA Information
Key Field: PROJ_NO
11 Fields defined:

Name	Type	Length	Description
AMSA_NO	C	4	AMSA number
PROJ_NO	C	5	Project number associated with AMSA (key field)
XAMSA_ADMN	N	3	Change in recognized AMSA administrative personnel
XAMSA_MCTC	N	3	Change in recognized AMSA auto of engineering/specified equipment
XAMSA_MECH	N	3	Change in recoginzed AMSA mechanics
XAMSA_RCPR	N	3	Total number of AMSA recognized personnel
XAMSA_VSUP	N	4	Change in vehicles supported but not stationed at AMSA
XCOMMO_TEC	N	3	Change in recognized AMSA commom/electric technicians
XINSTR_TEC	N	3	Change in recognized AMSA instrument repair
XOTHER_PER	N	3	Change in recognized AMSA other personnel
XSMARM_TEC	N	3	Change in recognized AMSA small arms repair

--Index 1:

Name: AR_PAMSA
Expression: VAL(PROJ_NO)

--Relation 1:

Name: AR_FYP
Expression: PROJ_NO

B.5 AR_REQS

Alias: AR_REQS
Description: Project Space Allocation Worksheet Requested/Approved Information
Key Field: PROJ_NO
100 Fields defined:

Name	Type	Length	Description
CNTGN_COST	N	4	Contingent cost = 5% total construction cost, based on requested data
CONST_COST	N	5	Total construction cost, based on requested data
FACPR_COST	N	5	Total cost of facility from requested data
FACROAD_CT	N	8	Cost of the requested center addition
FACSP_COST	N	4	Supporting facility cost, based on requested data
PROJ_COST	N	5	Total cost of project, based on requested data
PROJ_NO	C	5	Project number (key field)
RQ_ACCESS	N	5	Space requested for access roads
RQ_ADMIN	N	8	Space requested for center administrative area
RQ_ADMSPT	N	4	Space requested for administrative support area
RQ_AMSAARS	N	4	Space requested for AMSA small arms repair shop
RQ_AMSABRM	N	4	Space requested for AMSA battery room
RQ_AMSACBA	N	3	Space requested for AMSA classroom/break area
RQ_AMSACES	N	4	Space requested AMSA communications/electronic shop
RQ_AMSAFLS	N	4	Space requested for AMSA flammable storage
RQ_AMSAIRS	N	4	Space requested for AMSA instrument repair shop
RQ_AMSALRM	N	3	Space requested for AMSA locker room
RQ_AMSAMEP	N	5	Space requested for AMSA military equipment parking
RQ_AMSAMRR	N	3	Space requested for AMSA men's toilet/restroom
RQ_AMSAPOV	N	4	Space requested for AMSA private owned vehicles parking
RQ_AMSASAV	N	4	Space requested for AMSA small arms vault
RQ_AMSASHP	N	4	Space requested for AMSA shop office
RQ_AMSASRM	N	4	Space requested for AMSA supply room
RQ_AMSATRM	N	4	Space requested for AMSA tool room
RQ_AMSAWP	N	2	Space requested for AMSA wash platform
RQ_AMSAWRR	N	3	Space requested for AMSA women's toilet/restroom
RQ_AREADD	N	7	Space requested for area to be added
RQ_ARMORER	N	3	Space requested for armorer
RQ_ARMSVLT	N	4	Space requested for center arms vault
RQ_ASHALL	N	4	Space requested for assembly hall
RQ_ASMBLY	N	5	Space requested for center assembly area
RQ_BAND	N	4	Space requested for center band room
RQ_CAGES	N	5	Space requested for center storage cages
RQ_CHTAB	N	4	Space requested for chair and table storage
RQ_CIRC	N	6	Space requested for center circulation
RQ_CLSRMS	N	5	Space requested for center classrooms
RQ_COMSEC	N	4	Space requested for center COMSEC area
RQ_COMSTOR	N	4	Space requested for center COMSEC storage
RQ_COVERED	N	4	Space requested for covered storage
RQ_DRAFT	N	3	Space requested center drafting rooms
RQ_EDUC	N	6	Space requested educational area
RQ_ELEC	N	3	Space requested for center electrical system
RQ_FACADD	N	6	Size of the requested center addition
RQ_FDPREP	N	3	Space requested for the preparation of food
RQ_FDSTOR	N	3	Space requested for storage of food
RQ_FENCLTG	N	5	Space requested for MEP fencing and lighting
RQ_FLAMBLE	N	3	Space requested for center flammable storage area
RQ_FULLADM	N	5	Space requested full time personnel at center
RQ_GOCONF	N	3	Space requested for general office conference room
RQ_GROSS	N	8	Total center gross area
RQ_INSTCLS	N	3	Space requested for center instructor classrooms
RQ_JANSTOR	N	2	Space requested for center janitorial storage
RQ_LIBRRM	N	4	Space requested for center library reading room
RQ_LIBST	N	4	Space requested for center library storage
RQ_LNGCTR	N	4	Space requested for center learning center
RQ_MECH	N	5	Space requested for center mechnical area
RQ_MED	N	3	Space requested for center medical section area
RQ_MENSRR	N	4	Space requested for center men's toilets & shower
RQ_NET	N	8	Total center net area
RQ_OMSBAT	N	3	Space requested for OMS shop battery storage room
RQ_OMSFLAM	N	3	Space requested for OMS shop flammable storage
RQ_OMSSHOP	N	4	Space requested for OMS shop office
RQ_OMSSTOR	N	4	Space requested for OMS shop storage room
RQ_OMSTLT	N	3	Space requested for OMS shop unisex toilet
RQ_OMSTOOL	N	4	Space requested for OMS tools & parts room
RQ_OMSWBAY	N	5	Space requested for OMS work bays
RQ_OMSWP	N	2	Space requested for OMS wash platforms
RQ_OSPNM1	C	18	Other special training space 1 name
RQ_OSPNM2	C	18	Other special training space 2 name
RQ_OSPSF1	N	5	Other special training space 1 SQFT
RQ_OSPSF2	N	5	Other special training space 2 SQFT
RQ_OTHRSP	N	5	
RQ_PAVEMEP	N	5	Space requested for each item of equipment
RQ_PHOTO	N	3	Space requested for center photo lab
RQ_PHYEX	N	4	Space requested for center physical exam section area
RQ_POVPARK	N	5	Space requested for privately owned vehicle park
RQ_PUBSTOR	N	4	Space requested for center publication storage
RQ_RANGE	N	4	Space requested for center rifle range
RQ_RECRET	N	3	Space requested for center recruiting & retention
RQ_SCIF	N	3	Space requested for center SCIF area

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RQ_SCOPE   N    7        Total area of existing facility & requested additions
RQ_SCULL   N    3        Space requested for kitchen scullery
RQ_SHOPGRS N    6        Space requested for gross shop area
RQ_SHOPMCS N    4        Space requested for mechanical/custodial shop
RQ_SHOPNET N    5        Space requested for net shop area
RQ_SHPADD  N    6        Size of requested shop addition
RQ_SOIL    N    3        Space requested for center soil testing lab
RQ_SPECIAL N    5        Space requested for special training areas
RQ_STAGE   N    4        Space requested for center supply staging area
RQ_STORE   N    6        Space requested for center storage
RQ_STRUCT  N    6        Space requested for center structure
RQ_SUPOFF  N    4        Space requested for center supply offices
RQ_SUPPORT N    6        Space requested for center support area
RQ_TELE    N    3        Space requested for center telephone system
RQ_TNGAST  N    4        Space requested for center training aid storage
RQ_UNITCOM N    6        Space requested for unit common administrative area
RQ_UNITEX  N    7        Space requested for unit exclusive space
RQ_WOMENRR N    3        Space requested for women's toilets & showers
SHPRQAD_CT N    8        Cost of the requested shop addition
SPADM_COST N    4        Supervision and administration cost, based on request data

--Index 1:---------- --------------------

Name:       AR_REQS
Expression: VAL(PROJ_NO)


--Relation 1:-------------------------------

Name:       AR_FYP
Expression: PROJ_NO
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B.6 AR_UNIT

Alias: A_UNIT
Description: Army Reserve Unit Structure Information
Key Field: UIC
49 Fields defined:

Name	Type	Length	Description
ABTRACKED	N	2	Number of tracked vehicles actually located at base
ABTRAILER	N	2	Number of trailers actually located at base
ABWHEELED	N	2	Number of wheeled vehicles actually located at base
ASCSWPNS	N	3	Assigned crew served weapons
ASFULL_CIV	N	3	Number of unit full time civilian assigned strength
ASFULL_ENL	N	3	Number of unit full time enlisted assign strength
ASFULL_OFF	N	3	Number of full time officer assigned strength
ASSTR_ENL	N	3	Number of unit enlisted assigned strength
ASSTR_OFF	N	3	Number of unit officer assigned strength
ASSTR_TOT	N	3	Number of total unit assigned strength
ASTRACKED	N	2	Number of tracked vehicles assigned to unit
ASTRAILER	N	2	Number of trailers assigned to unit
ASWHEELED	N	2	Number of wheeled vehicles assigned to unit
AUFULL_CIV	N	3	Number of authorized full time civilian strength at unit
AUFULL_ENL	N	3	Number of authorized full time enlisted strength at unit
AUFULL_OFF	N	3	Number of authorized full time officer strength at unit
AUPRNSTF	N	3	Number of principal staff officers authorized to unit
AUSTR_ENL	N	3	Number of unit required enlisted strength
AUSTR_OFF	N	3	Number of unit required officer strength
AUSTR_TOT	N	3	Total unit required strength
AUTRACKED	N	2	Number of tracked vehicles authorized to unit
AUTRAILER	N	2	Number of trailers authorized to unit
AUWHEELED	N	2	Number of wheeled vehicles authorized to unit
COMM_BG	N	1	Number of brigadier generals as commander
COMM_COL	N	2	Number of colonels as commander
COMM_COMP	L	1	Is there a company commander
COMM_MG	N	1	Number of major generals as commander
COMSEC	L	1	Does unit have comsec account
COOKS	N	2	Number of cooks authorized to unit
CSWPNS	N	3	Number of crew served weapons in unit
CUR_FAC	C	5	Current facility ID
DRILL_WEND	C	1	Which weekend of the month will unit drill
MNT_ADMIN	N	2	Number of maintenance administrative personnel authorized to unit
MNT_PER	N	2	Number of maintenance personnel authorized to unit
MTOE	L	1	Mobilization table of organization and equipment
OFF_ADMIN	N	2	Number of full time administrative personnel authorized to unit
OFF_MNT	N	2	Number of full time maintenance personnel authorized to unit
OFF_SPACE	N	3	Number of unit personnel requiring open office space
OFF_SUPPL	N	2	Number of full time supply personnel authorized to unit
SCHOOL	L	1	United States Army Reserve forces school
SMALL_ARMS	L	1	
TDA	L	1	Table of distribution and allowances
UIC	C	6	Unit ID Code (key field)
UNIT_EX	N	2	Number of unit officers requiring exclusive office space
UNIT_MECH	N	2	Number of mechanics located in unit
UNIT_NAME	C	25	Unit name
UNIT_SUPPL	L	1	Does unit have unit supply account
PROPOSED	L	1	Proposed unit
OFF_MNTADM	N	2	Number of full time maintenance administrative personnel authorized to unit

--Index 1:

Name: AR_UNIT
Expression: UIC

--Relation 1:

Name: AR_UATP
Expression: UIC

--Relation 2:

Name: AR_FACIL
Expression: CUR_FAC

B.7 PE_1390

Alias: PE_1390
Description: Project Editor DD Form 1390 Information
Key Field: PROJ_NO
61 Fields defined:

Name	Type	Length	Description
ACRES	N	6	Number of acres of land required
AIR_COST	N	3	Cost of air pollution deficiency
ASGD_AUTH	N	3	Assigned reserves divided by authorized reserves
DAYS_FTP	N	1	Number of days/week facility scheduled for full time personnel
DISTANCE_1	N	4	Distance of other active/guard/reserve facility
DISTANCE_2	N	4	Distance of other active/guard/reserve facility
DISTANCE_3	N	4	Distance of other active/guard/reserve facility
DISTANCE_4	N	4	Distance of other active/guard/reserve facility
DISTANCE_5	N	4	Distance of other active/guard/reserve facility
FACAFL_CIV	N	3	Number of assigned full time civilian strength
FACAFL_ENL	N	4	Number of assigned full time enlisted strength
FACAFL_OFF	N	3	Number of assigned full time officers
FACAFL_TOT	N	4	Total number of assigned full time strength
FACAGR_ENL	N	4	Total number of assigned guard/reserve enlisted strength
FACAGR_OFF	N	3	Total number of assigned guard/reserve officer strength
FACAGR_TOT	N	4	Total number of assigned guard/reserve strength
FACAS_AGGR	N	4	Assigned aggregate vehicles
FACAS_EQUP	N	4	Total number of vehicles assigned at facility
FACAS_OTHR	N	3	Number of other vehicles assigned at facility
FACAS_TRKD	N	3	Number of tracked vehicles assigned at facility
FACAS_TRLR	N	3	Number of trailers assigned at facility
FACAS_WHLD	N	3	Number of wheeled vehicles assigned at facility
FACAU_AGGR	N	4	Authorized aggregate vehicles
FACAU_EQUP	N	4	Total number of vehicles authorized at facility
FACAU_OTHR	N	3	Number of other vehicles authorized at facility
FACAU_TRKD	N	3	Number of tracked vehicles authorized at facility
FACAU_TRLR	N	3	Number of trailers authorized at facility
FACAU_WHLD	N	3	Number of wheeled vehicles authorized at facility
FACFUL_CIV	N	3	Number of full time civilians authorized to facility
FACFUL_ENL	N	4	Number of enlisted strength authorized to facility
FACFUL_OFF	N	3	Number of officers authorized to facility
FACFUL_TOT	N	4	Total strength authorized to facility
FACGR_ENL	N	4	Total number of enlisted strength authorized to guard/reserve
FACGR_OFF	N	3	Total number of officers authorized to guard/reserve
FACGR_TOT	N	4	Total strength authorized to guard/reserve
FACILITY_1	C	14	Other active/guard/reserve facility
FACILITY_2	C	14	Other active/guard/reserve facility
FACILITY_3	C	14	Other active/guard/reserve facility
FACILITY_4	C	14	Other active/guard/reserve facility
FACILITY_5	C	14	Other active/guard/reserve facility
HLTH_COST	N	3	Safety and occupational health deficiency cost
JOINT_UNI	L	1	Joint or unilateral recommended construction
LAND_ACQ	C	54	Reason for land acquisition
LOCATION_1	C	25	Location of other active/guard/reserve facility
LOCATION_2	C	25	Location of other active/guard/reserve facility
LOCATION_3	C	25	Location of other active/guard/reserve facility
LOCATION_4	C	25	Location of other active/guard/reserve facility
LOCATION_5	C	25	Location of other active/guard/reserve facility
NITE_WEEK	N	1	Number of night/week reservists at facility
PERS_DATE	C	11	Date of recorded personnel strength
PROJECT_1	C	30	Other project planned in next four years
PROJECT_2	C	30	Other project planned in next four years
PROJ_COST1	C	6	Cost of project planned in next four years
PROJ_COST2	C	6	Cost of project planned in next four years
PROJ_FY1	C	4	Fiscal year of project planned in next four years
PROJ_FY2	C	4	Fiscal year of project planned in next four years
PROJ_NO	C	5	Project identification number (key field)
RECOM_DATE	C	11	Date of state review board recommendation
VEH_NAME	C	20	Other vehicle name
WATER_COST	N		Cost of water pollution deficiency
WEND_RES	N		Number of weekends/month facility scheduled for reservist

--Index 1:

Name: PE_1390
Expression: VAL(PROJ_NO)

Relation 1:

Name: PE_PROJ
Expression: PROJ_NO

B.8 PE_1391B

Alias: PE_1391B
Description: Project Editor DD Form 1391 Information, DBF B
Key Field: PROJ_NO
42 Fields defined:

Name	Type	Length	Description
COMPL_DATE	C	8	Completion date of design status
CONST_DATE	C	8	Construction start date
CONTR_COST	N	4	Contract cost
DEHUM_APP	C	16	Dehumidifier procuring appropriation
DEHUM_CT	N	4	Dehumidifier cost
DEHUM_FY	C	4	Dehumidifier fiscal year appropriated or requested
DESN_USED	C	15	where design most recently used
EQUP_COST	N	5	Total cost of equipment
FRNTRE_APP	C	16	Furniture procuring appropriation
FRNTRE_CT	N	4	Furniture cost
FRNTRE_FY	C	4	Furniture fiscal year appropriated or requested
INHS_COST	N	4	In-house cost
JANCPL_PER	C	3	Percent complete as of January of fiscal year
KITEQP_APP	C	16	Kitchen equipment procuring appropriation
KITEQP_CT	N	4	Kitchen equipment cost
KITEQP_FY	C	4	Kitchen equipment fiscal year appropriated or requested
METLOK_APP	C	16	Metal lockers procuring appropriation
METLOK_CT	N	4	Metal lockers cost
METLOK_FY	C	4	Metal lockers fiscal year appropriated or requested
OTDSN_COST	N	4	All other design costs
OTHR1_APP	C	16	First other procuring appropriation
OTHR1_CT	N	4	First other item 12B cost
OTHR1_FY	C	4	First other fiscal year appropriated or requested
OTHR1_NAME	C	20	First other name for item 12B equipment
OTHR2_APP	C	16	Second other procuring appropriation
OTHR2_CT	N	4	Second other item 12B cost
OTHR2_FY	C	4	Second other fiscal year appropriated or requested
OTHR2_NAME	C	20	Second other name for item 12B equipment
PER35_DATE	C	8	Date design 35% complete
PERCOM_MON	C	10	Month design 35% complete
PERCOM_YER	C	4	Year design 35% complete
PROD_COST	N	4	Production of plans and specifications cost
PROJ_NO	C	5	Project identification number (key field)
SHELV_APP	C	16	Shelving procuring appropriation
SHELV_CT	N	4	Shelving cost
SHELV_FY	C	4	Shelving fiscal year appropriated or requested
START_DATE	C	8	Starting date of design status
STDEF_DESN	L	1	Standard or definitive design
TOT_COST	N	4	Total cost
WIRPRT_APP	C	16	Wire partition procuring appropriation
WIRPRT_CT	N	4	Wire partition cost
WIRPRT_FY	C	4	Wire partition fiscal year appropriated or requested

--Index 1:

Name: PE_1391B
Expression: VAL(PROJ_NO)

--Relation 1:

Name: PE_PROJ
Expression: PROJ_NO

B.9 PE_PROJ

Alias: PE_PROJ
Description: Project Editor Basic Project Information
Key Field: PROJ_NO
18 Fields defined:

Name	Type	Length	Description
ADQ_SF	N	7	Amount of adequate square feet at facility
AREA_UM	C	2	Unit of measure for areas
CAT_CODE	C	6	Category code: 171-40, 214-09, or 441-10
COMPONENT	C	5	Project component
CONUSA	C	1	Continental United States Army
COST_NDX	N	4	Cost index
FAC_CITY	C	23	City where facility is located
FAC_STATE	C	2	State where facility is located
FAC_TITLE	C	30	Facility title
PREP_DATE	C	9	Preperation date of documents
PROG_ELMNT	C	6	Program element
PROJ_COST	N	5	Total cost of project
PROJ_FY	C	4	Project fiscal year
PROJ_NO	C	5	Project identification number (key field)
PROJ_TITLE	C	50	Project title
SCOPE_SF	N	7	Scope of project in square feet
SUBSTD_SF	N	7	Amount of substandard square feet at facility
PROPOSED	L	1	Proposed project

--Index 1:----------

Name: PE_PROJ
Expression: VAL(PROJ_NO)

--Index 2:----------

Name: PE_PROJ2
Expression: FAC_STATE+FAC_CITY

--Relation 1:----------

Name: AR_FYP
Expression: PROJ_NO

B.10 AR_CALC

Alias: AR_CALC
Description: Project Calculated Information
Key Field: PROJ_NO
117 Fields defined:

Name	Type	Length	Description
AMSA_WBAYS	N	2	Number of work bays authorized for AMSA
AMSA_WPLAT	N	1	Number of wash platforms authorized AMSA
CAGE_MTOE	N	3	Number of storage cages authorized center MTOE
CAGE_TDA	N	2	Number of storage cages authorized center TDA
CAGE_TOT	N	3	Total number of storage cages authorized for center
CAGE_USAR	N	2	Number of storage cages authorized center USAR
DW_LARGE	N	4	Largest of total DW1 (drill weekend 1), DW2, & DW3
ECS_WASHPL	N	1	Number of wash platforms authorized of ECS
FACAD_COST	N	8	Cost of authorized center addition
MAP_LARGE	N	4	Number of personnel in largest maintenance administrative drill week
OMS_WBAYS	N	2	Number of work bays authorized for OMS
OOS_LARGE	N	4	Number of personnel requiring open office space in largest drill week
PROJ_NO	C	5	Project number (key field)
SHPAD_COST	N	8	Cost of authorized shop addition
SP_ACCESS	N	5	Total space authorized for access roads
SP_ADMIN	N	8	Total space authorized for center administrative area
SP_ADMSPT	N	4	Total space authorized for administrative support area
SP_AMSAARS	N	4	Space authorized for AMSA small arms repair shop
SP_AMSABRM	N	4	Space authorized for AMSA battery room
SP_AMSACBA	N	3	Space authorized for AMSA classroom/break area
SP_AMSACES	N	4	Space authorized for AMSA communication/electronics shop
SP_AMSAFLS	N	4	Space authorized AMSA flammable storage
SP_AMSAIRS	N	4	Space authorized AMSA instrument repair shop
SP_AMSALRM	N	3	Space authorized AMSA locker room
SP_AMSAMRP	N	5	Space authorized AMSA military equipment parking
SP_AMSAMRR	N	3	Space authorized AMSA men's toilet/restroom
SP_AMSAPOV	N	4	Space authorized AMSA private owned vehicle parking
SP_AMSASAV	N	4	Space authorized AMSA small arms vault
SP_AMSASHP	N	4	Space authorized AMSA shop office
SP_AMSASRM	N	4	Space authorized AMSA supply room
SP_AMSATRM	N	4	Space authorized AMSA tool room
SP_AMSAWP	N	2	Space authorized AMSA wash platform
SP_AMSAWRR	N	3	Space authorized AMSA women's toilet/restroom
SP_APRON	N	4	Space authorized service or access apron
SP_ARMORER	N	3	Space authorized for armorer
SP_ARMSVLT	N	4	Space authorized for center arms vault
SP_ASHALL	N	4	Space authorized for an assembly hall
SP_ASMBLY	N	5	Space authorized for center assembly area
SP_BAND	N	4	Space authorized for center band rooms
SP_BG	N	4	Space authorized brigadier general at center
SP_CAGES	N	5	Space authorized center storage cages
SP_CDRCOL	N	4	Space authorized COL (O-6) commanders at center
SP_CDRLTC	N	4	Space authorized LTC (O-5) commanders at center
SP_CHTAB	N	4	Space authorized chair and table storage
SP_CIRC	N	6	Space authorized center circulation
SP_CLSRMS	N	5	Space authorized center classrooms
SP_COMSEC	N	4	Space authorized center COMSEC area
SP_COMSTOR	N	4	Space authorized center COMSEC storage
SP_COVERED	N	4	Space authorized covered storage
SP_CSWPNS	N	4	Space authorized crew served weapons storage
SP_DRAFT	N	3	Space authorized drafting rooms
SP_ECSSHOP	N	5	Space authorized ESC shop
SP_EDUC	N	6	Space authorized educational area
SP_ELEC	N	3	Space authorized center electrical system
SP_FACADD	N	8	Size of authorized center addition
SP_FDPREP	N	3	Space authorized for the preparationof food
SP_FDSTOR	N	3	Space authorized for the storage of food
SP_FENCLTG	N	5	Space authorized for MEP fencing and lighting
SP_FLAMBLE	N	3	Space authorized center flammable storage area
SP_FTSUPOP	N	4	Space authorized full time supply technicians
SP_FUELSTD	N	4	Space authorized ECS fuel storage & dispensing system
SP_FULLADM	N	5	Space authorized full time personnel at center
SP_GOCONF	N	3	Space authorized general officer conference room
SP_GROSS	N	8	Total center gross area
SP_HARDSTD	N	5	Space authorized equipment concentration site hardstd
SP_HQDET	N	4	Space authorized headquarter detachment commander
SP_INSTCLS	N	3	Space authorized center instructor classrooms
SP_JANSTOR	N	2	Space authorized center janitorial storage area
SP_LIBRRM	N	4	Space authorized center library reading room
SP_LIBST	N	4	Space authorized center library storage
SP_LNGCTR	N	4	Space authorized center learning center
SP_MECH	N	5	Space authorized center mechanical area
SP_MED	N	3	Space authorized center medical section area
SP_MENSRR	N	4	Space authorized center men's toilets & showers
SP_MG	N	4	Space authorized center magor general
SP_NET	N	8	Total center net area
SP_NOM	N	5	Total center nominal area
SP_OMSBAT	N	3	Space authorized OMS shop battery storage room
SP_OMSFLAM	N	3	Space authorized OMS shop flammable storage
SP_OMSMAIN	N	4	Space authorized OMS shop office for authorized full time maintenance

```
        SP_OMSOFF  N    4        Space authorized OMS shop office for LDW OMS administration
        SP_OMSSHOP N    4        Space authorized OMS shop office
        SP_OMSSTOR N    4        Space authorized OMS shop storage room
        SP_OMSTLT  N    3        Space authorized OMS shop unisex toilet
        SP_OMSTOOL N    4        Space authorized OMS tools & parts room
        SP_OMSWBAY N    5        Space authorized OMS work bays
        SP_OMSWP   N    2        Space authorized OMS wash platforms
        SP_OTHRSP  N    4
        SP_PAVEMEP N    5        Space authorized each item of equipment
        SP_PHOTO   N    3        Space authorized center photo lab
        SP_PHYEX   N    4        Spacy authorized physical exam section area
        SP_POVPARK N    5        Space authorized privately owned vehicle parking
        SP_PRNSTF  N    4        Space authorized principal staff
        SP_PUBSTOR N    4        Space authorized center publication storage
        SP_RANGE   N    4        Space authorized center rifle range
        SP_RECRET  N    3        Space authorized recruiting & retention office
        SP_SCIF    N    3        Space authorized center sensitive compartmented information facility (SCIF)
area
        SP_SCOPE   N    7        Total area of existing facility & authorized addition
        SP_SCULL   N    3        Space authorized kitchen scullery
        SP_SHOPGRS N    6        Space authorized gross shop area
        SP_SHOPMCS N    4        Space authorized mechanical/custodial shop
        SP_SHOPNET N    5        Space authorized net shop area
        SP_SHPADD  N    6        Size of authorized shop addition
        SP_SMLARMS N    4        Space authorized small arms storage
        SP_SOIL    N    3        Space authorized center soil testing lab
        SP_SPECIAL N    5        Space authorized special training areas
        SP_STAGE   N    4        Space authorized center supply staging area
        SP_STORE   N    6        Space authorized center storage
        SP_STRUCT  N    6        Space authorized center structure
        SP_SUPOFF  N    4        Space authorized center supply offices
        SP_SUPPORT N    6        Space authorized center support area
        SP_TELE    N    3        Space authorized center telephone system
        SP_TNGAST  N    4        Space authorized center training aid storage
        SP_UNITCOM N    6        Space authorized unit common administrative area
        SP_UNITEX  N    7        Space authorized unit exclusive area at center
        SP_UNSUPOF N    4        Space authorized unit(s) property account(s)
        SP_WOMENRR N    3        Space authorized women's toilets & showers

        --Index 1:--------------------------------

        Name:       AR_CALC
        Expression: VAL(PROJ_NO)


        --Relation 1:-----------------------------

        Name:       AR_FYP
        Expression: PROJ_NO
```

B.11 AR_NOTE

Alias: AR_NOTE
Description: Project Documentation Memo Fields
Key Field: PROJ_NO
78 Fields defined:

Name	Type	Length	Description
DD_1391	M	10	Memo field for 1391
JUSTF_MEMO	M	10	Memo for 1391 justification
NOTE_1A	M	10	Note for full time administrative area
NOTE_1B	M	10	Note for unit exclusive administrative area
NOTE_1C	M	10	Note for unit common administrative area
NOTE_1D	M	10	Note for retention administrative area
NOTE_1E	M	10	Note for administrative support administrative area
NOTE_2A	M	10	Note for assembly hall assembly area
NOTE_2B	M	10	Note for chair & table storage assembly area
NOTE_2C1	M	10	Note for food preparation assembly area
NOTE_2C2	M	10	Note for scullery assembly area
NOTE_2C3	M	10	Note for food storage assembly area
NOTE_2D	M	10	Note for arms vault assembly area
NOTE_2E	M	10	Note for armorer assembly area
NOTE_3A	M	10	Note for classrooms education area
NOTE_3B	M	10	Note for library reading room education areas
NOTE_3C	M	10	Note for learning center education areas
NOTE_3D	M	10	Note for library storage education areas
NOTE_3E	M	10	Note for training and storage education area
NOTE_3F	M	10	Note for comsec training education area
NOTE_4A	M	10	Note for unit & individual storage area
NOTE_4B	M	10	Note for staging storage area
NOTE_4C	M	10	Note for supply offices storage area
NOTE_4D	M	10	Note for comsec storage area
NOTE_4E	M	10	Note for janitorial storage area
NOTE_4F	M	10	Note for flammable storage area
NOTE_5A	M	10	Note for rifle range special training area
NOTE_5B	M	10	Note for band room special training area
NOTE_5C	M	10	Note for drafting room special training area
NOTE_5D	M	10	Note for general office conference room special training room
NOTE_5E	M	10	Note for instructor classrooms special training area
NOTE_5F	M	10	Note for medical section training & storage special training area
NOTE_5G	M	10	Note for photo lab special training area
NOTE_5H	M	10	Note for physical exam section special training area
NOTE_5I	M	10	Note for publications storage special training area
NOTE_5J	M	10	Note for sensitive compartment information facility special training area
NOTE_5K	M	10	Note for soil testing lab special training area
NOTE_5L	M	10	Other special spaces
NOTE_5M	M	10	Other special spaces
NOTE_6A	M	10	Note for men's toilets & showers support area
NOTE_6B	M	10	Note for women's toilets & showers support area
NOTE_6C	M	10	Note for mechanical support area
NOTE_6D	M	10	Note for electrical support area
NOTE_6E	M	10	Note for telephone support area
NOTE_7A	M	10	Note for OMS shop office maintenance shop area
NOTE_7B	M	10	Note for OMS unisex toilet maintenance shop area
NOTE_7C	M	10	Note for OMS tool storage maintenance shop area
NOTE_7D	M	10	Note for OMS parts storage OMS shop area
NOTE_7E	M	10	Note for OMS battery storage/charging maintenance shop
NOTE_7F	M	10	Note for OMS flammable storage maintenance shop area
NOTE_7G	M	10	Note for AMSA shop office maintenance shop area
NOTE_7H	M	10	Note for AMSA men's toilets maintenance shop area
NOTE_7I	M	10	Note for AMSA women's toilets maintenance shop area
NOTE_7J	M	10	Note for AMSA locker room maintenance shop area
NOTE_7K	M	10	Note for AMSA classroom/break area maintenance shop area
NOTE_7L	M	10	Note for AMSA tool room maintenance shop area
NOTE_7M	M	10	Note for AMSA supply room maintenance shop area
NOTE_7N	M	10	Note for AMSA battery room maintenance shop area
NOTE_7O	M	10	Note for AMSA common/electric shop maintenance shop area
NOTE_7P	M	10	Note for AMSA instrument repair shop maintenance shop area
NOTE_7Q	M	10	Note for AMSA small arms repair shop maintenance shop area
NOTE_7R	M	10	Note for AMSA small arms vault maintenance shop area
NOTE_7S	M	10	Note for AMSA flammable storage maintenance shop area
NOTE_7T	M	10	Note for mechanics/custodial maintenance shop area
NOTE_7U	M	10	Note for work bays maintenance shop area
NOTE_8A	M	10	Note for POV parking center supporting facility
NOTE_8B	M	10	Note for POV parking AMSA supporting facilities
NOTE_8C	M	10	Note for OMS MEP supporting facilities
NOTE_8D	M	10	Note for AMSA MEP supporting facilities
NOTE_8E	M	10	Note for wash platforms OMS supporting facilities
NOTE_8F	M	10	Note for wash platforms AMSA supporting facilities
NOTE_8G	M	10	Note for coverd storage supporting facilities
NOTE_8H	M	10	Note for MEP fencing & lighting supporting facility
NOTE_8I	M	10	Note for access roads supporting facilities
NOTE_CIR	M	10	Note for circulation
NOTE_STR	M	10	Note for structure
PROJ_MEMO	M	10	Memo for description of proposed construction
PROJ_NO	C	5	Project number (key field)

Index 1:

```
Name:       AR_NOTR
Expression: VAL(PROJ_NO)


--Relation 1:--------------------------------

Name:       AR_FYP
Expression: PROJ_NO
```

B.12 AR_PLNFR

```
Alias: PLN
Description: Relationship Of Facilities and Projects
Key Field: FAC_ID
2 Fields defined:
-----------------------------

Name      Type Length  Description
FAC_ID     C    5        Facility ID number (key field)
PROJ_NO    C    5        Project number (key field)

--Index 1:---------- --------------------

Name:       AR_PLNFR
Expression: VAL(PROJ_NO)


--Index 2:  - --- -----  -- ----- ----- -

Name:       AR_PLNFA
Expression: FAC_ID


--Relation 1:------------ ----------------

Name:       AR_FACIL
Expression: FAC_ID
```

B.13 AR_UATP

```
Alias: AR_UATP
Description: Units Attached to Project With Project Unit Information
Key Field: PROJ_NO+UIC
7 Fields defined:
---------------------------------------

Name      Type Length  Description
MIS_MODERN L    1        Is mission a modernization
MIS_NEWCON L    1        Is mission a new construction
MIS_NEWEX  L    1        Is mission new or existing
MIS_REPLAC L    1        Is mission a replacement
PROJ_NO    C    5        Project number (key field)
UIC        C    6        Unit ID Code (key field)
PROJ_DW    C    1        Drill weekend for this project

--Index 1:-- -- ---- --- ----------------

Name:       AR_UATP
Expression: VAL(PROJ_NO)


--Relation 1:------------ --------------

Name:       AR_FYP
Expression: PROJ_NO
```

B.14 AR_UTOT

Alias: AR_UTOT
Description: Project Documentation Unit Totals
Key Field: PROJ_NO
56 Fields defined:

Name	Type	Length	Description
AUFL_ADMIN	N	3	Number of authorized full time administrative personnel
AUFL_MAINT	N	3	Number of authorized full time maintenance personnel
AUFL_SUPPL	N	2	Number of authorized full time supply technicians
AUMECH_LDW	N	3	Number of authorized mechanics on largest drill week
COMSEC_ACT	N	2	Number of unit(s) authorized comsec account(s)
DW_LDW	N	1	Number of the largest drill weekend
ECSEQ_ITEM	N	4	Number of items of equipment stored at ECS
EQUIP_ITEM	N	3	Number of items of equipment authorized for home stationed storage
FACAB_EQUP	N	4	Actual number of total vehicles at base
FACAB_TRKD	N	3	Actual number of tracked vehicles at base
FACAB_TRLR	N	3	Actual number of trailers at base
FACAB_WHLD	N	3	Actual number of wheeled vehicles at base
FACAFL_CIV	N	3	Total number of assigned full time civilian strength
FACAFL_ENL	N	4	Total number assigned full time enlisted strength
FACAFL_OFF	N	3	Total number assigned full time officer strength
FACAFL_TOT	N	4	Total center assigned full time strength
FACAGR_ENL	N	4	Total number assigned guard/reserve enlisted strength
FACAGR_OFF	N	3	Total number assigned guard/reserve officer strenght
FACAGR_TOT	N	4	Total center assigned guard/reserve strength
FACAS_EQUP	N	4	Total number vehicles assigned at center
FACAS_TRKD	N	3	Total number tracked vehicles assigned at center
FACAS_TRLR	N	3	Total number trailers assigned at center
FACAS_WHLD	N	3	Total number wheeled vehicles assigned at center
FACAU_EQUP	N	4	Total number vehicles authorized at center
FACAU_STR	N	4	Total authorized strength of all units at center
FACAU_STWP	N	4	Total authorized strength of all units authorized weapons
FACAU_TRKD	N	3	Total number tracked vehicles authorized at center
FACAU_TRLR	N	3	Total number trailers authorized at center
FACAU_WHLD	N	3	Total number wheeled vehicles authorized at center
FACCDR_BG	N	1	Total number brigadier general commanders
FACCDR_COL	N	2	Total number colonel commanders at center
FACCDR_LTC	N	2	Total number lieutenant colonel commanders
FACCDR_MG	N	1	Total number major general commanders at center
FACFUL_CIV	N	3	Total number authorized full time civilian assigned to all units
FACFUL_ENL	N	4	Total number authorized full time engineers assigned to all unit
FACFUL_OFF	N	3	Total number authorized full time officers assigned to all unit
FACFUL_TOT	N	4	Total number full time civilian enlisted & officer assigned to unit
FACGR_ENL	N	4	Total authorized guard/reserve enlisted strength
FACGR_OFF	N	3	Total authorized guard/reserve officer strength
FACGR_TOT	N	4	Total authorized guard/reserve strength
FACSTR_TOT	N	5	Total authorized strength of facility
FAC_COOKS	N	2	Total number of cooks at center
FAC_CSWPNS	N	3	Total number of crew served weapons
FAC_HQDET	N	3	Total number headquarter detachment commanders
FAC_PRNSTF	N	3	Total number of prinicipal staff officers
FAC_WBAYS	N	2	Number of authorized workbays located at facility
MAP_LDW	N	1	Number of the largest maintenance administrative personnel drill weekend
MECH_TOT	N	3	Total number of mechanics authorized units stationed at center
OOS_LDW	N	1	Number of largest maintenance weekend requested open office space
PROJ_NO	C	5	Project number (key field)
RESTR_MTOE	N	4	Total required strength of center MTOE unit(s)
RESTR_TDA	N	4	Total required strength of center TDA & training division unit
RESTR_USAR	N	4	Total required strength of USAR school unit(s)
UN_PRPACCT	N	2	Number of unit(s) authorized property account(s)
AUFL_MNTAD	N	3	Total Number of Authorized Full Time Maintenance Administrative Personnel
TAMSA_VSUP	N	5	Total Number of Actual AMSA Supported Vehicles.

--Index 1:

Name: AR_UTOT
Expression: VAL(PROJ_NO)

--Relation 1:

Name: AR_FYP
Expression: PROJ_NO

B.15 PE_1391A

Alias: PE_1391A
Description: Project Editor DD 1391 Worksheet, DBF A
Key Field: PROJ_NO
118 Fields defined:

Name	Type	Length	Description
ASBREM_CT	N	4	Asbestos removal cost
ASBREM_SP	N	6	Asbestos removal quantity of space
ASBREM_UM	C	2	Asbestos removal unit of measure
ASBREM_UNT	N	10	Asbestos removal unit cost
CNTGN_COST	N	4	Contingent cost = 5% total construction cost
CONST_COST	N	5	Total construction cost
FACPR_COST	N	5	Primary facility cost
FACSP_COST	N	4	Supporting facility cost
LITING_CT	N	3	Lighting cost
LITING_SP	N	6	Lighting quantity of space
LITING_UM	C	2	Lighting unit of measure
LITING_UNT	N	10	Lighting unit cost
MNTADD_CT	N	4	Cost of maintenance addition
MNTADD_SP	N	6	Quantity of space of maintenence addition
MNTADD_UM	C	2	Unit of measure for maintenance addition
MNTADD_UNT	N	10	Unit cost of maintenance addition
MNTALT_CT	N	4	Cost of maintenance alternation
MNTALT_SP	N	6	Quantity of space for maintenance aleerration
MNTALT_UM	C	2	Unit of measure for maintenance alteration
MNTALT_UNT	N	10	Unit cost of maintenance alternation
MNTBLD_CT	N	4	Maintenance building cost
MNTBLD_SP	N	6	Maintenance building quantity of space
MNTBLD_UM	C	2	Maintenance building unit of measure
MNTBLD_UNT	N	10	Maintenance building unit cost
PAVING_CT	N	3	Paving cost
PAVING_SP	N	6	Paving quantity of space
PAVING_UM	C	2	Paving unit of measure
PAVING_UNT	N	10	Paving unit cost
PFOTH1_CT	N	4	First other primary facility cost
PFOTH1_NM	C	32	First other primary facility name
PFOTH1_SP	N	6	First other primary facility quantity of space
PFOTH1_UM	C	2	First other primary facility unit of measure
PFOTH1_UNT	N	10	First other primary facility unit cost
PFOTH2_CT	N	4	Second other primary facility cost
PFOTH2_NM	C	32	Second other primary facility name
PFOTH2_SP	N	6	Second other primary facility quantity of space
PFOTH2_UM	C	2	Second other primary facility unit of measure
PFOTH2_UNT	N	10	Second other primary facility unit cost
PFOTH3_CT	N	4	Third other primary facility cost
PFOTH3_NM	C	32	Third other primary facility name
PFOTH3_SP	N	6	Third other primary facility quantity of space
PFOTH3_UM	C	2	Third other primary facility unit of measure
PFOTH3_UNT	N	10	Third other primary facility unit cost
PFOTH4_CT	N	4	Fourth other primary facility cost
PFOTH4_NM	C	32	Fourth other primary facility name
PFOTH4_SP	N	6	Fourth other primary facility quantity of space
PFOTH4_UM	C	2	Fourth other primary facility unit of measure
PFOTH4_UNT	N	10	Fourth other primary facility unit cost
PFOTH5_CT	N	4	Fifth other primary facility cost
PFOTH5_NM	C	32	Fifth other primary facility name
PFOTH5_SP	N	6	Fifth other primary facility quantity of space
PFOTH5_UM	C	2	Fifth other primary facility unit of measure
PFOTH5_UNT	N	10	Fifth other primary facility unit cost
PFOTH6_CT	N	4	Sixth other primary facility cost
PFOTH6_NM	C	32	Sixth other primary facility name
PFOTH6_SP	N	6	Sixth other primary facility quantity of space
PFOTH6_UM	C	2	Sixth other primary facility unit of measure
PFOTH6_UNT	N	10	Sixth other primary facility unit cost
PROJ_NO	C	5	Project identification number (key field)
SFOTH1_CT	N	3	First other supporting facility cost
SFOTH1_NM	C	32	First other supporting facility name
SFOTH1_SP	N	6	First other supporting facility quantity of space
SFOTH1_UM	C	2	First other supporting facility unit of measure
SFOTH1_UNT	N	10	First other supporting facility unit cost
SFOTH2_CT	N	3	Second other supporting facility cost
SFOTH2_NM	C	32	Second other supporting facility name
SFOTH2_SP	N	6	Second other supporting facility quantity of space
SFOTH2_UM	C	2	Second other supporting facility unit of measure
SFOTH2_UNT	N	10	Second other primary facility unit cost
SFOTH3_CT	N	3	Third other supporting facility cost
SFOTH3_NM	C	32	Third other supporting facility name
SFOTH3_SP	N	6	Third other supporting facility quantity of space
SFOTH3_UM	C	2	Third other supporting facility unit of measure
SFOTH3_UNT	N	10	Third other supporting facility unit cost
SFOTH4_CT	N	3	Fourth other supporting facility cost
SFOTH4_NM	C	32	Fourth other supporting facility name
SFOTH4_SP	N	6	Fourth other supporting facility quantity of space
SFOTH4_UM	C	2	Fourth other supporting facility unit of measure
SFOTH4_UNT	N	10	Fourth other supporting facility unit cost
SFOTH5_CT	N	3	Fifth other supporting facility cost

```
SFOTH5_NM  C    32        Fifth other supporting facility name
SFOTH5_SP  N    6         Fifth other supporting facility quantity of space
SFOTH5_UM  C    2         Fifth other supporting facility unit of measure
SFOTH5_UNT N    10        Fifth other supporting facility unit cost
SFOTH6_CT  N    3         Sixth other supporting facility cost
SFOTH6_NM  C    32        Sixth other supporting facility name
SFOTH6_SP  N    6         Sixth other supporting facility quantity of space
SFOTH6_UM  C    2         Sixth other supporting facility unit of measure
SFOTH6_UNT N    10        Sixth other supporting facility unit cost
SITIMP_CT  N    3         Site improvement cost
SITIMP_SP  N    6         Site improvement quantity of space
SITIMP_UM  C    2         Site improvement unit of measure
SITIMP_UNT N    10        Site improvement unit cost
SPADM_COST N    4         Supervision and administrative cost
TELCOM_CT  N    3         Telecommunications cost
TELCOM_SP  N    6         Telecommunications quantity of space
TELCOM_UM  C    2         Telecommunicatons unit of measure
TELCOM_UNT N    10        Telecommunications unit cost
TRGADD_CT  N    4         Cost of training building addition
TRGADD_SP  N    6         Quantity of space for training building addition
TRGADD_UM  C    2         Uint of measure of training building addition
TRGADD_UNT N    10        Unit cost of training building addition
TRGALT_CT  N    4         Cost of training building alteration
TRGALT_SP  N    6         Quantity of space for training building alteration
TRGALT_UM  C    2         Unit of measure for training building alteration
TRGALT_UNT N    10        Unit cost for training building alteration
TRGBLD_CT  N    4         Training building cost
TRGBLD_SP  N    6         Training building quantity of space
TRGBLD_UM  C    2         Training building unit of measure
TRGBLD_UNT N    10        Training building unit cost
WARHSE_CT  N    4         Warehouse cost
WARHSE_SP  N    6         Quantity of space for warehouse
WARHSE_UM  C    2         Unit of measure for warehouse
WARHSE_UNT N    10        Unit cost for warehouse
WSHRAK_CT  N    3         Wash rack cost
WSHRAK_SP  N    6         Wash rack quantity of space
WSHRAK_UM  C    2         Wash rack unit of measure
WSHRAK_UNT N    10        Wash rack unit cost

--Index 1:----------

Name:       PR_1391A
Expression: VAL(PROJ_NO)


--Relation 1:----------

Name:       PE_PROJ
Expression: PROJ_NO
```

B.16 PE_MEMO

```
Alias: PE_MEMO
Description: Project Editor Memo Fields
Key Field: PROJ_NO
10 Fields defined:
--------------------------- ----- -------

Name       Type Length  Description
A_LABEL    M    10
JUSTF_MEMO M    10        Memo for 1391 justification
PROJ_MEMO  M    10        Memo for description of proposed construction
PROJ_NO    C    5         Project identification number (key field)
UNIT_MEMO  M    10        Memo field used to combine units for 1390 form
A5034R     M    10        DA 5034R worksheet
A5034R_JUS M    10        DA 5034R justification
FURNITURE  M    10        Furniture allocation sheet
INFOS      M    10        Information systems worksheet
PROJ_VAL   M    10        Project validation letter

--Index 1:-------- - ---- ------- ----------

Name:       PE_MEMO
Expression: VAL(PROJ_NO)


--Relation 1:----   ------ -- ---- ------

Name:       PE_PROJ
Expression: PROJ_NO
```

B.17 PE_UNIT

```
Alias: PE_UNIT
Description: Project Editor Unit Information
Key Field: PROJ_NO
8 Fields defined:
---------------------------------------

Name       Type Length  Description
ASSTR_ENL  N    3         Number of assigned enlisted strength
ASSTR_OFF  N    3         Number of assigned officer strength
ASSTR_TOT  N    3         Number of total unit assigned strength
AUSTR_ENL  N    3         Number of authorized enlisted strength
AUSTR_OFF  N    3         Number of authorized officer strength
AUSTR_TOT  N    3         Total unit required strength
PROJ_NO    C    5         Project identification number (key field)
UNIT_NAME  C    25        Name of unit

--Index 1:- - ------------  -- --- ---- -

Name:       PE_UNIT
Expression: VAL(PROJ_NO)


--Relation 1:--- ---  -- -- ------ --  --  ---

Name:       PE_PROJ
Expression: PROJ_NO
```

B.18 AR_FYP

Alias: FYP
Description: Main project database
Key Field: PROJ_NO
63 Fields defined:

Name	Type	Length	Description
PROJ_NO	C	5	Project number (key field)
FC_FY	C	4	FORSCOM fiscal year
CON_FY	C	4	CONUSA fiscal year
OCAR_FY	C	4	OCAR fiscal year
FC_PRI	C	3	FORSCOM priority
CON_PRI	C	3	CONUSA priority
MUS_PRI	C	3	MUSARC priority
OCAR_PRI	C	3	OCAR priority
CONUSA	C	1	Continental U.S. Army
FAC_CITY	C	23	Project city
FAC_STATE	C	2	Project state
PROJ_TYPE	C	8	Type
PROJ_TITLE	C	30	Title of project
CAT	C	4	Category
CWE	N	6	CWR, also used to be AR_CALC->FAC_COST
PA	N	6	Programmed amount
PREV_PRI	C	3	Previous CONUSA priority
PROB	C	4	Problem area (land, strength, ?)
FC_SCORE	N	4	FORSCOM score
CON_SCORE	N	4	CONUSA score
OPTION_FY	C	4	Fiscal year of option
ACQUIS_FY	C	4	Fiscal year of acquisition
CONSTR_FY	C	4	Fiscal year of construction
UPDATE	D	8	Date record last updated
RMK1	C	35	Remarks
RMK2	C	35	Remarks
MUSARC	C	20	Name of the MUSARC
CE_DIST	C	15	Corp of engineer district
CE_DIV	C	15	Corp of engineer division
ACTIVE	L	1	Designates active project (for transfer)
T_FY	C	4	Temporary FY (stored here until updated)
T_CONPRI	C	3	Temporary CONUSA priority (stored here until updated)
T_FCPRI	C	3	Temporary FORSCOM priority (stored here until updated)
TEST	L	1	Used internally by the program during updating
PROB_FLAG	C	1	Indicates whether "problem" project (Y/N)
MDEP	C	6	Management decision package
ABAND	L	1	Add a band room
ACRES	N	6	Number of acres of land required
ADRAFT	L	1	Add a drafting room
AGOCONF	L	1	Add a general officer conference room
AINSTCLASS	L	1	Add an instructor classroom
AMED	L	1	Add a medical section training and storage
APHOTO	L	1	Add a photo lab
APHYEX	L	1	Add a physical examining section
ARANGE	L	1	Add a firing range
ASCIF	L	1	Add a sensitive compartmented information facility
ASOIL	L	1	Add a soil testing lab
AUSARF	L	1	Add United States Armed Forces storage
CNST_AGNT	C	20	Construction agent for project
DESN_AGNT	C	20	Design agent for project
FAC_ADD	L	1	Check for additions to facility
FAC_ALTER	L	1	Check for alteration to facility
FAC_NEW	L	1	Check for new facility
FAC_STORY	L	1	Check for two story facilities
JOINT_UNI	L	1	State facility review board recommendation
PERS_DATE	C	11	Date of last personnel strength record
PREP_DATE	C	9	Document preparation date
PROJECT_1	C	30	Other project planned for center in next 4 years
PROJECT_2	C	30	Other project planned for center in next 4 years
PROJ_FY	C	4	Project fiscal year
RECOM_DATE	C	9	Date of state facility review board recommendation
VALD_DATE	C	9	Project validation date
PROPOSED	L	1	Proposed project

--Index 1:----------

Name: FCPRI
Expression: val(fc_pri)

--Index 2:----------

Name: FYPRI
Expression: val(fc_fy)*1000+val(fc_pri)

--Index 3:----------

Name: FYCON
Expression: val(fc_fy)*10000+val(conusa)*1000+val(con_pri)

```
--Index 4:- -- -  - -- -- --- -        - -

Name:       AR_PYP
Expression: VAL(PROJ_NO)


--Index 5: ---------  -- ---  ---- - ------

Name:       SORTINDX
Expression: fc_fy


--Relation 1:--- ----    - --  ------------ -

Name:       AR_PLNFR
Expression: VAL(PROJ_NO)


--Relation 2: ------   ------ -- ----- -------

Name:       AR_FACIL
Expression:
```

B.19 AR_MDEP

```
Alias: MDEP
Description:
Key Field: PROJ_NO
25 Fields defined:
------------ ----- -- ----- - ---------
```

Name	Type	Length	Description
PROJ_NO	C	5	Project number (key field)
M_ARMC	N	6	
M_ARMC_L	N	6	
M_ARMC_E	N	6	
M_ARMC_S	N	6	
M_2SA3	N	6	
M_766F	N	6	
M_3R7P	N	6	
M_3S7P	N	6	
M_3S6F	N	6	
M_767F	N	6	
M_DD7R	N	6	
M_WRC1	N	6	
M_WRC3	N	6	
M_WRC5	N	6	
M_WRC7	N	6	
M_WRN2	N	6	
M_WRS2	N	6	
M_WRX2	N	6	
M_WR76	N	6	
M_WRA2	N	6	
M_XXXX	N	6	
M_YYYY	N	6	
MDEP_TOT	N	6	
MDEP	C	6	

```
 -Index 1:--- -    --- --  -  - -- - ------

Name:       AR_MDEP
Expression: PROJ_NO
```

B.20 AR_FYP_I

Alias: FYP_I
Description: Inactive project database holds projects deleted from ar_fyp
Key Field: PROJ_NO
62 Fields defined:

Name	Type	Length	Description
PROJ_NO	C	5	Project number (key field)
FC_FY	C	4	FORSCOM fiscal year
CON_FY	C	4	CONUSA fiscal year
OCAR_FY	C	4	OCAR fiscal year
FC_PRI	C	3	FORSCOM priority
CON_PRI	C	3	CONUSA priority
MUS_PRI	C	3	MUSARC priority
OCAR_PRI	C	3	OCAR priority
CONUSA	C	1	Continental US Army
FAC_CITY	C	23	Project city
FAC_STATE	C	2	Project state
PROJ_TYPE	C	8	Type
PROJ_TITLE	C	30	Title of project
CAT	C	4	Category
CWE	N	9	CWE, also used to be AR_CALC->FAC_COST
PA	N	6	Program amount
PREV_PRI	C	3	Previous CONUSA priority
PROB	C	4	Problem area (land, strength, ?)
FC_SCORE	N	4	FORSCOM score
CON_SCORE	N	4	CONUSA score
OPTION_FY	C	4	Fiscal year of option
ACQUIS_FY	C	4	Fiscal year of acquisition
CONSTR_FY	C	4	Fiscal year of construction
UPDATE	D	8	Date record last updated
RMK1	C	35	Remarks
RMK2	C	35	Remarks
MUSARC	C	20	Name of MUSARC
CE_DIST	C	15	Corp of engineer district
CE_DIV	C	15	Corp of engineer division
ACTIVE	L	1	Designates active project (for transfer)
T_FY	C	4	Temporary FY (stored here until updated)
T_CONPRI	C	3	Temporary CONUSA priority (stored here until updated)
T_FCPRI	C	3	Temporary FORSCOM priority
TEST	L	1	Used internally by the program during updating
PROB_FLAG	C	1	Indicates whether "Problem" project (Y/N)
MDEP	C	6	Management decision package
ABAND	L	1	Add a band room
ACRES	N	6	Number of acres of land required
ADRAFT	L	1	Add a drafting room
AGOCONF	L	1	Add a general officer conference room
AINSTCLASS	L	1	Add an instructor classroom
AMED	L	1	Add a medical section training and storage
APHOTO	L	1	Add a photo lab
APHYEX	L	1	Add a physical examining section
ARANGE	L	1	Add a firing range
ASCIF	L	1	Add a sensitive compartmented information facility
ASOIL	L	1	Add a soil testing lab
AUSARP	L	1	Add United States Armed Forces storage
CNST_AGNT	C	20	Construction agent for project
DESN_AGNT	C	20	Design agent for project
FAC_ADD	L	1	Check for additions to facility
FAC_ALTER	L	1	Check for alteration to facility
FAC_NEW	L	1	Check for new facility
FAC_STORY	L	1	Check for two story facilities
JOINT_UNI	L	1	State facility review board recommendation
PERS_DATE	C	11	Date of last personnel strength record
PREP_DATE	C	9	Document preparation date
PROJECT_1	C	30	Other project planned for center in next 4 years
PROJECT_2	C	30	Other project planned for center in next 4 years
PROJ_FY	C	4	Project fiscal year
RECOM_DATE	C	9	Date of state facility review board recommentation
VALD_DATE	C	9	Project validation date

B.21 FM_1390

Alias: FM_1390
Description: Project Editor DD Form 1390 Information for submited projects
Key Field: PROJ_NO
61 Fields defined:

Name	Type	Length	Description
ACRES	N	6	Number of acres of land required
AIR_COST	N	3	Cost of air pollution deficiency
ASGD_AUTH	N	3	Assigned reserves divided by authorized reserves
DAYS_PTP	N	1	Number of days/week facility scheduled for full time personnel
DISTANCE_1	N	4	Distance of other active/guard/reserve facility
DISTANCE_2	N	4	Distance of other active/guard/reserve facility
DISTANCE_3	N	4	Distance of other active/guard/reserve facility
DISTANCE_4	N	4	Distance of other active/guard/reserve facility
DISTANCE_5	N	4	Distance of other active/guard/reserve facility
FACAFL_CIV	N	3	Number of assigned full time civilian strength
FACAFL_ENL	N	4	Number of assigned full time enlisted strength
FACAFL_OFF	N	3	Number of assigned full time officers
FACAFL_TOT	N	4	Total number of assigned full time strength
FACAGR_ENL	N	4	Total number of assigned guard/reserve enlisted strength
FACAGR_OFF	N	3	Total number of assigned guard/reserve officer strength
FACAGR_TOT	N	4	Total number of assigned guard/reserve strength
FACAS_AGGR	N	4	Assigned aggregate vehicles
FACAS_EQUP	N	4	Total number of vehicles assigned at facility
FACAS_OTHR	N	3	Number of other vehicles assigned at facility
FACAS_TRKD	N	3	Number of tracked vehicles assigned at facility
FACAS_TRLR	N	3	Number of trailers assigned at facility
FACAS_WHLD	N	3	Number of wheeled vehicles assigned at facility
FACAU_AGGR	N	4	Authorized aggregate vehicles
FACAU_EQUP	N	4	Total number of vehicles authorized at facility
FACAU_OTHR	N	3	Number of other vehicles authorized at facility
FACAU_TRKD	N	3	Number of tracked vehicles authorized at facility
FACAU_TRLR	N	3	Number of trailers authorized at facility
FACAU_WHLD	N	3	Number of wheeled vehicles authorized at facility
FACFUL_CIV	N	3	Number of full time civilians authorized to facility
FACFUL_ENL	N	4	Number of enlisted strength authorized to facility
FACFUL_OFF	N	3	Number of officers authorized to facility
FACFUL_TOT	N	4	Total strength authorized to facility
FACGR_ENL	N	4	Total number of enlisted strength authorized to guard/reserve
FACGR_OFF	N	3	Total number of officers authorized to guard/reserve
FACGR_TOT	N	4	Total strength authorized to guard/reserve
FACILITY_1	C	14	Other active/guard/reserve facility
FACILITY_2	C	14	Other active/guard/reserve facility
FACILITY_3	C	14	Other active/guard/reserve facility
FACILITY_4	C	14	Other active/guard/reserve facility
FACILITY_5	C	14	Other active/guard/reserve facility
HLTH_COST	N	3	Safety and occupational health deficiency cost
JOINT_UNI	L	1	Joint or unilateral recommended construction
LAND_ACQ	C	54	Reason for land acquisition
LOCATION_1	C	25	Location of other active/guard/reserve facility
LOCATION_2	C	25	Location of other active/guard/reserve facility
LOCATION_3	C	25	Location of other active/guard/reserve facility
LOCATION_4	C	25	Location of other active/guard/reserve facility
LOCATION_5	C	25	Location of other active/guard/reserve facility
NITE_WEEK	N	1	Number of night/week reservists at facility
PERS_DATE	C	11	Date of recorded personnel strength
PROJECT_1	C	30	Other project planned in next four years
PROJECT_2	C	30	Other project planned in next four years
PROJ_COST1	C	6	Cost of project planned in next four years
PROJ_COST2	C	6	Cost of project planned in next four years
PROJ_FY1	C	4	Fiscal year of project planned in next four years
PROJ_FY2	C	4	Fiscal year of project planned in next four years
PROJ_NO	C	5	Project identification number (key field)
RECOM_DATE	C	11	Date of state review board recommendation
VEH_NAME	C	20	Other vehicle name
WATER_COST	N	3	Cost of water pollution deficiency
WEND_RES	N	1	Number of weekends/month facility scheduled for reservist

--Index 1:

Name: FM_1390
Expression: VAL(PROJ_NO)

B.22 FM 1391B

Alias: FM_1391B
Description: Project Editor DD Form 1391 Information, DBF B for submitted project
Key Field: PROJ_NO
42 Fields defined:

Name	Type	Length	Description
COMPL_DATE	C	8	Completion date of design status
CONST_DATE	C	8	Construction start date
CONTR_COST	N	4	Contract cost
DEHUM_APP	C	16	Dehumidifier procuring appropriation
DEHUM_CT	N	4	Dehumidifier cost
DEHUM_FY	C	4	Dehumidifier fiscal year appropriated or requested
DESN_USED	C	15	Where design most recently used
EQUP_COST	N	5	Total cost of equipment
FRNTRE_APP	C	16	Furniture procuring appropriation
FRNTRE_CT	N	4	Furniture cost
FRNTRE_FY	C	4	Furniture fiscal year appropriated or requested
INHS_COST	N	4	In-house cost
JANCPL_PER	C	3	Percent complete as of January of fiscal year
KITEQP_APP	C	16	Kitchen equipment procuring appropriation
KITEQP_CT	N	4	Kitchen equipment cost
KITEQP_FY	C	4	Kitchen equipment fiscal year appropriated or requested
METLOK_APP	C	16	Metal lockers procuring appropriation
METLOK_CT	N	4	Metal lockers cost
METLOK_FY	C	4	Metal lockers fiscal year appropriated or requested
OTDSN_COST	N	4	All other design costs
OTHR1_APP	C	16	First other procuring appropriation
OTHR1_CT	N	4	First other item 12B cost
OTHR1_FY	C	4	First other fiscal year appropriated or requested
OTHR1_NAME	C	20	First other name for item 12B equipment
OTHR2_APP	C	16	Second other procuring appropriation
OTHR2_CT	N	4	Second other item 12B cost
OTHR2_FY	C	4	Second other fiscal year appropriated or requested
OTHR2_NAME	C	20	Second other name for item 12B equipment
PER35_DATE	C	8	Date design 35% complete
PERCOM_MON	C	10	Month design 35% complete
PERCOM_YER	C	4	Year design 35% complete
PROD_COST	N	4	Production of plans and specifications cost
PROJ_NO	C	5	Project identification number (key field)
SHELV_APP	C	16	Shelving procuring appropriation
SHELV_CT	N	4	Shelving cost
SHELV_FY	C	4	Shelving fiscal year appropriated or requested
START_DATE	C	8	Starting date of design status
STDEP_DESN	L	1	Standard or definitive design
TOT_COST	N	4	Total cost
WIRPRT_APP	C	16	Wire partition procuring appropriation
WIRPRT_CT	N	4	Wire partition cost
WIRPRT_FY	C	4	Wire partition fiscal year appropriated or requested

--Index 1:----------

Name: FM_1391B
Expression: VAL(PROJ_NO)

B.23 FM_PROJ

Alias: FM_PROJ
Description: Project Editor Basic Project Information for submited project
Key Field: PROJ_NO
17 Fields defined:

Name	Type	Length	Description
ADQ_SF	N	7	Amount of adequate square feet at facility
AREA_UM	C	2	Unit of measure for areas
CAT_CODE	C	6	Category code: 171-40, 214-09, or 441-10
COMPONENT	C	5	Project component
CONUSA	C	1	Continental United States Army
COST_NDX	N	4	Cost index
FAC_CITY	C	23	City where facility is located
FAC_STATE	C	2	State where facility is located
FAC_TITLE	C	30	Facility title
PREP_DATE	C	9	Preparation date of documents
PROJ_ELMNT	C	6	Program element
PROJ_COST	N	5	Total cost of project
PROJ_FY	C	4	Project fiscal year
PROJ_NO	C	5	Project identification number (key field)
PROJ_TITLE	C	50	Project title
SCOPE_SF	N	7	Scope of project in square feet
SUBSTD_SF	N	7	Amount of substandard square feet at facility

--Index 1:

Name: FM_PROJ
Expression: VAL(PROJ_NO)

--Index 2:

Name: FM_PROJ2
Expression: FAC_STATE+FAC_CITY

B.24 FM_1391A

Alias: FM_1391A
Description: Project Editor DD 1391 Worksheet, DBF A for submitted project
Key Field: PROJ_NO
118 Fields defined:

Name	Type	Length	Description
ASBREM_CT	N	4	Asbestos removal cost
ASBREM_SP	N	6	Asbestos removal quantity of space
ASBREM_UM	C	2	Asbestos removal unit of measure
ASBREM_UNT	N	10	Asbestos removal unit cost
CNTGN_COST	N	4	Contingent cost = 5% total construction cost
CONST_COST	N	5	Total construction cost
FACPR_COST	N	5	Primary facility cost
FACSP_COST	N	4	Supporting facility cost
LITING_CT	N	3	Lighting cost
LITING_SP	N	6	Lighting quantity of space
LITING_UM	C	2	Lighting unit of measure
LITING_UNT	N	10	Lighting unit cost
MNTADD_CT	N	4	Cost of maintenance addition
MNTADD_SP	N	6	Quantity of space of maintenance addition
MNTADD_UM	C	2	Unit of measure for maintenance addition
MNTADD_UNT	N	10	Unit cost of maintenance addition
MNTALT_CT	N	4	Cost of maintenance alteration
MNTALT_SP	N	6	Quantity of space for maintenance alteration
MNTALT_UM	C	2	Unit of measure for maintenance alteration
MNTALT_UNT	N	10	Unit cost of maintenance alteration
MNTBLD_CT	N	4	Maintenance building cost
MNTBLD_SP	N	6	Maintenance building quantity of space
MNTBLD_UM	C	2	Maintenance building unit of measure
MNTBLD_UNT	N	10	Maintenance building unit cost
PAVING_CT	N	3	Paving cost
PAVING_SP	N	6	Paving quantity of space
PAVING_UM	C	2	Paving unit of measure
PAVING_UNT	N	10	Paving unit cost
PFOTH1_CT	N	4	First other primary facility cost
PFOTH1_NM	C	32	First other primary facility name
PFOTH1_SP	N	6	First other primary facility quantity of space
PFOTH1_UM	C	2	First other primary facility unit of measure
PFOTH1_UNT	N	10	First other primary facility unit cost
PFOTH2_CT	N	4	Second other primary facility cost
PFOTH2_NM	C	32	Second other primary facility name
PFOTH2_SP	N	6	Second other primary facility quantity of space
PFOTH2_UM	C	2	Second other primary facility unit of measure
PFOTH2_UNT	N	10	Second other primary facility unit cost
PFOTH3_CT	N	4	Third other primary facility cost
PFOTH3_NM	C	32	Third other primary facility name
PFOTH3_SP	N	6	Third other primary facility quantity of space
PFOTH3_UM	C	2	Third other primary facility unit of measure
PFOTH3_UNT	N	10	Third other primary facility unit cost
PFOTH4_CT	N	4	Fourth other primary facility cost
PFOTH4_NM	C	32	Fourth other primary facility name
PFOTH4_SP	N	6	Fourth other primary facility quantity of space
PFOTH4_UM	C	2	Fourth other primary facility unit of measure
PFOTH4_UNT	N	10	Fourth other primary facility unit cost
PFOTH5_CT	N	4	Fifth other primary facility cost
PFOTH5_NM	C	32	Fifth other primary facility name
PFOTH5_SP	N	6	Fifth other primary facility quantity of space
PFOTH5_UM	C	2	Fifth other primary facility unit of measure
PFOTH5_UNT	N	10	Fifth other primary facility unit cost
PFOTH6_CT	N	4	Sixth other primary facility cost
PFOTH6_NM	C	32	Sixth other primary facility name
PFOTH6_SP	N	6	Sixth other primary facility quantity of space
PFOTH6_UM	C	2	Sixth other primary facility unit of measure
PFOTH6_UNT	N	10	Sixth other primary facility unit cost
PROJ_NO	C	5	Project identification number (key field)
SFOTH1_CT	N	3	First other supporting facility cost
SFOTH1_NM	C	32	First other supporting facility name
SFOTH1_SP	N	6	First other supporting facility quantity of space
SFOTH1_UM	C	2	First other supporting facility unit of measure
SFOTH1_UNT	N	10	First other supporting facility unit cost
SFOTH2_CT	N	3	Second other supporting facility cost
SFOTH2_NM	C	32	Second other supporting facility name
SFOTH2_SP	N	6	Second other supporting facility quantity of space
SFOTH2_UM	C	2	Second other supporting facility unit of measure
SFOTH2_UNT	N	10	Second other primary facility unit cost
SFOTH3_CT	N	3	Third other supporting facility cost
SFOTH3_NM	C	32	Third other supporting facility name
SFOTH3_SP	N	6	Third other supporting facility quantity of space
SFOTH3_UM	C	2	Third other supporting facility unit of measure
SFOTH3_UNT	N	10	Third other supporting facility unit cost
SFOTH4_CT	N	3	Fourth other supporting facility cost
SFOTH4_NM	C	32	Fourth other supporting facility name
SFOTH4_SP	N	6	Fourth other supporting facility quantity of space
SFOTH4_UM	C	2	Fourth other supporting facility unit of measure
SFOTH4_UNT	N	10	Fourth other supporting facility unit cost
SFOTH5_CT	N	3	Fifth other supporting facility cost

```
SFOTH5_NM  C    32      Fifth other supporting facility name
SFOTH5_SP  N    6       Fifth other supporting facility quantity of space
SFOTH5_UM  C    2       Fifth other supporting facility unit of measure
SFOTH5_UNT N    10      Fifth other supporting facility unit cost
SFOTH6_CT  N    3       Sixth other supporting facility cost
SFOTH6_NM  C    32      Sixth other supporting facility name
SFOTH6_SP  N    6       Sixth other supporting facility quantity of space
SFOTH6_UM  C    2       Sixth other supporting facility unit of measure
SFOTH6_UNT N    10      Sixth other supporting facility unit cost
SITIMP_CT  N    3       Site improvement cost
SITIMP_SP  N    6       Site improvement quantity of space
SITIMP_UM  C    2       Site improvement unit of measure
SITIMP_UNT N    10      Site improvement unit cost
SPADM_COST N    4       Supervision and administrative cost
TELCOM_CT  N    3       Telecommunications cost
TELCOM_SP  N    6       Telecommunications quantity of space
TELCOM_UM  C    2       Telecommunicatons unit of measure
TELCOM_UNT N    10      Telecommunications unit cost
TRGADD_CT  N    4       Cost of training building addition
TRGADD_SP  N    6       Quantity of space for training building addition
TRGADD_UM  C    2       Uint of measure of training building addition
TRGADD_UNT N    10      Unit cost of training building addition
TRGALT_CT  N    4       Cost of training building alteration
TRGALT_SP  N    6       Quantity of space for training building alteration
TRGALT_UM  C    2       Unit of measure for training building alteration
TRGALT_UNT N    10      Unit cost for training building alteration
TRGBLD_CT  N    4       Training building cost
TRGBLD_SP  N    6       Training building quantity of space
TRGBLD_UM  C    2       Training building unit of measure
TRGBLD_UNT N    10      Training building unit cost
WARHSE_CT  N    4       Warehouse cost
WARHSE_SP  N    6       Quantity of space for warehouse
WARHSE_UM  C    2       Unit of measure for warehouse
WARHSE_UNT N    10      Unit cost for warehouse
WSHRAK_CT  N    3       Wash rack cost
WSHRAK_SP  N    6       Wash rack quantity of space
WSHRAK_UM  C    2       Wash rack unit of measure
WSHRAK_UNT N    10      Wash rack unit cost

--Index 1: ------ -   ----  - - --- --- --

Name:       FM_1391A
Expression: VAL(PROJ_NO)
```

B.25 FM_MEMO

Alias: FM_MEMO
Description: Project Editor Memo Fields for submited project
Key Field: PROJ_NO
10 Fields defined:

Name	Type	Length	Description
A_LABEL	M	10	
JUSTF_MEMO	M	10	Memo for 1391 justification
PROJ_MEMO	M	10	Memo for description of proposed construction
PROJ_NO	C	5	Project identification number (key field)
UNIT_MEMO	M	10	Memo field used to combine units for 1390 form
A5034R	M	10	DA 5034R worksheet
A5034R_JUS	M	10	DA 5034R justification
FURNITURE	M	10	Furniture allocation sheet
INFOS	M	10	Information systems worksheet
PROJ_VAL	M	10	Project validation letter

--Index 1:

Name: FM_MEMO
Expression: VAL(PROJ_NO)

B.26 FM_UNIT

Alias: FM_UNIT
Description: Project Editor Unit Information for submited project
Key Field: PROJ_NO
8 Fields defined:

Name	Type	Length	Description
ASSTR_ENL	N	3	Number of assigned enlisted strength
ASSTR_OFF	N	3	Number of assigned officer strength
ASSTR_TOT	N	3	Number of total unit assigned strength
AUSTR_ENL	N	3	Number of authorized enlisted strength
AUSTR_OFF	N	3	Number of authorized officer strength
AUSTR_TOT	N	3	Total unit required strength
PROJ_NO	C	5	Project identification number (key field)
UNIT_NAME	C	25	Name of unit

--Index 1:

Name: FM_UNIT
Expression: VAL(PROJ_NO)

B.27 AR_MINOR

Alias:
Description:
Key Field:
38 Fields defined:

Name	Type	Length	Description
PROJ_NO	C	5	Project number (Key field)
FY	C	4	Fiscal year
PRIORITY	C	3	Priority
INSTL	C	8	Installation
MACOM	C	1	Major Army Command
PROJ_TYPE	C	1	Project type
PROJ_TITLE	C	30	Project title
CWE	N	6	Construction working estimate
PA	N	6	Program amount
PREV_PRI	C	3	Previous priority
UPDATE	D	8	Date of last record update
RMK1	C	35	Remarks
RMK2	C	35	Remarks
CE_DIST	C	4	Corps district
ACTIVE	L	1	Active project (for programmer)
T_FY	C	4	Temporary FY (stored here until updated)
T_FCPRI	C	3	Temporary FORSCOM priority (stored here until updated)
TEST	L	1	Programmer's test field
PROB_FLAG	C	1	Flag to identify problem projects
APPROVED	D	8	Date approved
CLOSED	D	8	Date closed
DESN_CPL	D	8	Date design completion
AWARDED	D	8	Date project was awarded
COMPLETE	D	8	Date completed
DES_COST	N	6	Design cost
DES_PROV	D	8	Date design provided
DES_PRG_YR	C	11	Design program year
DES_RTCOST	N	6	Design returned costs
DES_RTDATE	D	8	Date of design money returned
CON_COST	N	9	Construction costs
CON_PROV	D	8	Date construction provided
CON_PRG_YR	C	8	Construction program year
CON_RTCOST	N	9	Construction returned costs
CON_RTDATE	D	8	Date construction money returned
EST_AWARD	D	8	Estimated award date
ACT_AWARD	D	8	Actual award date
EST_BID	D	8	Estimated bid opening
ACT_BID	D	8	Actual bid opening

--Index 1:

Name: PRIORITY
Expression: val(priority)

--Index 2:

Name: M_FYPRI
Expression: val(fy)*1000+val(priority)

--Index 3:

Name: M_SORT
Expression: fy

B.28 AR_GUIDR

Alias:
Description:
Key Field:
40 Fields defined:

Name	Type	Length	Description
FY	N	4	Fiscal year of guidance
OCAR	N	6	Total guidance from OCAR
WCOM	N	6	WESTCOM guidance
USA1	N	6	First Army guidance
USA2	N	6	Second Army guidance
USA4	N	6	Fourth Army guidance
USA5	N	6	Fifth Army guidance
USA6	N	6	Sixth Army guidance
FCOM	N	6	Guidance for FORSCOM assigned projects
DA_FC	N	6	DA guidance to FORSCOM
DA_WC	N	6	DA guidance to WESTCOM
DA_EU	N	6	DA guidance to EUROPE
DA_OT	N	6	DA guidance to all others
OCAR_OLD	N	6	Previous total guidance from OCAR
WCOM_OLD	N	6	Previous WESTCOM guidance
USA1_OLD	N	6	Previous First Army guidance
USA2_OLD	N	6	Previous Second Army guidance
USA4_OLD	N	6	Previous Fourth Army guidance
USA5_OLD	N	6	Previous Fifth Army guidance
USA6_OLD	N	6	Previous Sixth Army guidance
FCOM_OLD	N	6	Previous guidance for FORSCOM
G_ARMC	N	6	Guidance for this MDEP
G_2SA3	N	6	Guidance for this MDEP
G_766F	N	6	Guidance for this MDEP
G_3R7F	N	6	Guidance for this MDEP
G_3S7P	N	6	Guidance for this MDEP
G_3S6F	N	6	Guidance for this MDEP
G_767F	N	6	Guidance for this MDEP
G_DD7R	N	6	Guidance for this MDEP
G_WRC1	N	6	Guidance for this MDEP
G_WRC3	N	6	Guidance for this MDEP
G_WRC5	N	6	Guidance for this MDEP
G_WRC7	N	6	Guidance for this MDEP
G_WRN2	N	6	Guidance for this MDEP
G_WRS2	N	6	Guidance for this MDEP
G_WRX2	N	6	Guidance for this MDEP
G_WR76	N	6	Guidance for this MDEP
G_WRA2	N	6	Guidance for this MDEP
G_XXXX	N	6	Guidance for this MDEP
G_YYYY	N	6	Guidance for this MDEP

--Index 1:

Name: GUIDRFY
Expression: fy

B.29 RCAS_FAC

```
Alias: RFAC
Description:
Key Field: FAC_ID
8 Fields defined:
```

Name	Type	Length	Description
FAC_ID	C	5	
OIC	C	25	
POC_TELE	C	14	
TYPE_FAC	C	28	
MAIL_ST	C	30	
MAIL_CITY	C	23	
MAIL_ZIP	C	10	
MAIL_STABR	C	2	

```
- Index 1:
Name:       RCAS_FAC
Expression: FAC_ID
```

B.30 RCAS_UNT

```
Alias: RUNT
Description:
Key Field: UIC
14 Fields defined:
```

Name	Type	Length	Description
UIC	C	6	
FAC_ID	C	5	
ADDR_AL	C	30	
CITY	C	23	
ST_ABBR	C	2	
ST_ADDR	C	30	
ZIP1	C	5	
ZIP2	C	4	
TEL_COM	C	14	
TEL_AVN	C	14	
TEL_FTS	C	14	
POC_NAME	C	25	
STR_OFF	N	3	
STR_BNL	N	4	

```
--Index 1:
Name:       RCAS_UNT
Expression: uic
```

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